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Validation of a national leadership framework to promote and protect quality residential aged care: Study protocol

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Validation of a national leadership framework to promote and protect quality residential aged care: Study protocol

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44 # Validation of a national leadership framework to promote

45 # and protect quality residential aged care: Study protocol

46

47 ## Abstract

48 **Introduction:** Australia's aging population is driving an increased demand for residential aged care

49 services, yet concerns about the quality and safety of such care remain. The recent Royal Commission

50 into Aged Care Quality and Safety identified various limitations relating to leadership within these

51 services. While some competency frameworks exist globally, there is a need for sector-specific

52 leadership competencies in the Australian residential aged care setting to promote and protect quality

53 of care.

54

55 **Methods and Analysis:** This study aims to establish the content validity of a national leadership

56 framework (RCSM-QF) for promoting and protecting the quality of residential aged care in Australia.

57 The research will involve a two-round Delphi survey with aged care experts to rate the relevance,

58 importance, and clarity of RCSM-QF items and their descriptions. The study will also seek

59 suggestions for revisions and additional items. Content validity will be assessed using the Content

60 Validity Index (CVI), with items meeting specific criteria retained, revised, or removed. Ethics

61 approval has been sought to ensure the well-being and convenience of participants while mitigating

62 potential recruitment challenges.

63

64 **Discussion:** This research addresses the need for a comprehensive leadership competency

65 framework for Australian residential aged care senior managers. It seeks to validate the RCSM-QF

66 framework, which can define and describe the competencies required by senior managers and inform

67 quality indicators for performance evaluations. Such evidence-based frameworks can standardise

68 leadership development and promote consistency in healthcare operations. Additionally, the RCSM-

69 QF may guide training and career progression opportunities, fostering a culture of quality and

70 accountability in the aged care sector. However, the study acknowledges potential limitations,

71 including sampling bias and the reliance on expert opinions in the Delphi process, but aims to mitigate

72 these through focus groups for richer insights in subsequent phases of this work.

73

74 **Keywords:** residential aged care, quality, leadership, senior managers, validation

75

76 **Strengths**

77 • Purposive sampling will be used as a targeted recruitment method for interviewing

78 participants from peak bodies, primary health networks, and researchers, allowing for diverse

79 expert perspectives within the Australian aged care sector.

80 • The Delphi method is a popular tool for framework validation in research, allowing for

81 structured input from Auatrliaa aged care experts to refine and validate the preliminary

82 framework.

83 **Limitations**

84 • The Delphi process is based on subjective opinions rather than empirical evidence, potentially

85 affecting the validity and reliability of the framework validation process.

86 • To address limitations in the Delphi process, future phases of the research may require

87 qualitative methods to allow for real-time feedback and in-depth insights from a wider range

88 of industry experts

89 • The anonymous nature of the Delphi process limits in-depth discussions, debates, and the

90 exchange of ideas, potentially restricting the exploration of alternative perspectives regarding

91 the leadership competencies influencing the quality of Australian residential aged care

92 services.

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3

98   **Introduction**

99   Australia's population is ageing, with the proportion of people aged 65 years or over projected to

100   increase from 16% (2018) to 23% in 2066.[1] In line with national ageing trends, the demand for

101   Australian residential aged care services is also increasing,[2] and there have been ongoing concerns

102   about the quality and safety of that care.[3] Indeed, the recent Royal Commission into Aged Care

103   Quality and Safety described a "cruel and harmful" national aged care system comprising services

104   that were "neglectful" and "woefully inadequate".[4] The leadership of these services, including

105   'ground-level' residential aged care senior management teams, was described as "lacking", and

106   leadership competencies for promoting quality of care were found to be "poorly defined".[4.] The lack

107   of any sector-specific professional development or leadership framework to guide the acquisition of

108   these required skills within the Australian residential aged-care setting is a concern.[5]

109

110   Existing studies have generated some knowledge regarding leadership requirements, and some

111   competency frameworks exist for aged care services globally, although evidence gaps remain.

112   Seminal work in Australian aged care leadership was conducted by Jeon et al. (2015) in validating a

113   clinical leadership framework, the Aged care *Clinical* Leadership Qualities Framework (ACLQF), for

114   middle (mainly clinical) managers in both community-based and residential aged care services.[6] in

115   2014, Aged & Community Services Australia (ACSA) developed the Australian Aged Care

116   Leadership Capability Framework. While this framework reflected an important step forward, its

117   inclusion of different leadership levels (e.g. frontline, middle- and senior managers) and multiple

118   service types (residential, acute and community-based) meant it was necessarily general in nature,

119   with limited specificity concerning the multi-faceted and increasingly demanding nature of residential

120   aged care facilities.[7] Furthermore, the ACSA framework describes leadership capabilities (statements

121   of behaviours, skills, and knowledge that affect an outcome) but not competencies (a measure or

122   index of how well a person performs that capability) and does not explicitly link these to promoting

123   quality care.

124

4

125 With an absence of competency-based frameworks specific to the Australian residential aged care

126 setting, there is a clear need to describe and model the competencies required by leadership teams to

127 provide effective leadership within this increasingly complex environment. A recent programme of

128 work identified the knowledge, skills and abilities needed by senior managers to promote and protect

129 quality residential aged care.[8] Competencies were to form a preliminary leadership competency

130 framework, The Residential Aged Care Senior Manager Quality Framework (RCSM-QF).[8] This

131 original and empirically grounded competency framework synthesised Australian senior managers'

132 skills and personal qualities to promote and protect the quality of care in the residential aged care

133 setting. Its formation drew on the experiences and strategic insights of senior managers themselves

134 and Australian industry experts.[8] These empirically derived leadership competencies were compared

135 with those extracted from pre-existing senior-management-relevant leadership frameworks, including

136 the HLA Competency Directory,[9] IPEC Core Competencies,[10] and Master Health Service

137 Management Competency Framework [11] to form a novel (though untested) competency framework.

138

139 Although the formation of the preliminary RCSM-QF is a step in addressing the evidence gap relating

140 to sector-specific leadership competencies and professional development requirements for senior

141 managers to promote quality of care, it has not been applied or tested in the Australian residential

142 aged care setting nor the competencies empirically validated. Therefore, the accuracy and usefulness

143 of the RCSM-QF for describing and helping assess the leadership competencies required by senior

144 managers across Australia are not yet confirmed.

145

146 This study aims to establish the content validity of the preliminary RCSM-QF within the Australian

147 residential aged care context using a modified Delphi process. Once this validity is established, this

148 programme of work could provide a practical tool to form a professional development infrastructure

149 for current and aspiring Australian residential aged care senior managers who continue to operate

150 within this increasingly complex environment.

151

5

Methods and Analysis

Aim: To establish the content validity of a national leadership framework to promote and protect the quality of residential aged care in Australia

Objectives:

1. Rate the relevance, importance and clarity of RCSM-QF items [competencies OR personal qualities] and their descriptions using a 4-point Content Validity Index (CVI) scale
2. Suggest RCSM-QF item and description scale revisions.
3. Suggest RCSM – QF domain name and domain definition revisions and
4. Suggest additional items [competencies or personal qualities] for the RCSM – QF

Study Design

Content validity refers to the extent to which a measurement tool, such as a test or assessment, accurately represents the specific content it is intended to measure.[12] Content validity is an important aspect of validating a leadership competency.[13] In the context of the current research, the method will assess whether the RCSM–QF accurately and comprehensively represents the key competencies required for effective leadership within the Australian residential aged care setting. We will evaluate content validity using the Delphi survey technique and a Content Validity Index (CVI). The Delphi technique is a widely used method for achieving consensus.[14] It uses a series of questionnaires to collect information from participants in a number of iterations, or 'rounds'. The starting point is an open questionnaire or a pre-derived list of questions.[15] Following each round, each participant receives an individualised report of their responses to the group response.[15] In subsequent rounds, participants can reassess their responses in light of this information.[14] The process allows for a controlled debate and for consensus to build without necessitating group interaction, an advantage in the context of geographically dispersed and time-constrained experts. It also limits the time and

6

178 resources required to plan and facilitate group interactions and the bias from dominant individuals

179 within this consensus-building phase.[14]

180

Study setting

182 The current study will be completed with representatives who contribute to or advise regarding the

183 delivery of aged care services in Australia. Examples of different 'levels' of aged care include: i)

184 entry-level community-based care at home; ii) higher levels of care at home (Home Care Packages

185 Program), and when living at home is not an option; iii) residential aged care.[16] This study focuses

186 specifically on the role of senior managers in providing quality care in the Australian residential aged

187 care setting. Residential aged care provides health care services and accommodation for older people

188 who are unable to continue living independently in their own homes.[17]

189

190 In Australia, residential aged care providers can span a range of different sectors, including religious,

191 charitable, community, for-profit and government organisations.[17] Typical services may include

192 accommodation, personal care assistance, clinical care and a range of social care activities, including

193 recreational activities and emotional support. Approximately 250,000 older Australians received

194 permanent residential aged care at some time during the financial year 2021/2022.[1]

195

Participant recruitment

197 To be eligible for participation, panel participants will need to be self- or other-identified aged care

198 experts through current employment within the aged care sector and have high-level knowledge and

199 experience in aged care. Expertise may include clinical practice, management, service delivery,

200 policy, research and education or combinations of the above. From previous work, this study will

201 target five major groupings of expert representatives, including peak advocacy bodies, primary health

202 network representatives, members of state and federal government, aged care researchers and

203 residential aged care executives and governing board members spanning multiple organisation types

204 (non-for-profit, for-profit, non-governmental [NGO], and government-operated).[8] Purposive sampling

7

205 will be used to ensure that rural, remote, and metropolitan settings across Australia are represented on

206 the panel. Purposive sampling will also allow the identification and selection of information-rich

207 participants from the expert groupings with knowledge and experience working within the Australian

208 aged care sector.[18] Participant selection will be purposive, and aged care industry experts will be

209 recognised as possessing specific knowledge of the health service needs of older persons in Australia

210 and capable of reflecting critically on the link between senior manager leadership skills and quality

211 residential aged care.

212

213 A list of eligible participants will be generated using a combination of investigators' aged care

214 industry experience and a comprehensive desk search. Participants will be emailed an invitation for

215 involvement in *Round 1* and followed up by phone if a response has not been received in two weeks.

216 Participants will provide electronic consent before commencing the questionnaire.

217

218 **Data collection**

219 *Round 1:* In reviewing, modifying and validating the RCSM-QF, two rounds of iterative consultation

220 will be undertaken with the Delphi panel via email. In round one, experts will be sent email

221 invitations to participate. Upon clicking the survey link, participants will be redirected to an online

222 platform where they will be asked to confirm their consent to participate and will rate each item and

223 its response scale based on clarity, relevance, and importance using a 4-point CVI scale where 1 = not

224 clear/relevant/important, 2 = somewhat clear/relevant/important, 3 = quite clear/relevant/important,

225 and 4 = highly clear/relevant/important.[19] Through open dialogue boxes, experts will also provide

226 suggestions for item wording, domain name, and domain definition revisions and propose additional

227 items for any missing experiential aspects of care. Demographic questions will include gender, year of

228 birth, highest educational qualification, place of work and current professional role. Experts will be

229 given a 2-week window to complete the Round 1 survey, following which the survey will be closed,

230 and the results will be exported into Microsoft Excel. Reminder emails will be dispatched to

231 participants on days 5 and 12 of the Round 1 questionnaire if they have not taken part.

8

232

233 *Round 2:* The second round will commence 1 week after the conclusion of Round 1. Experts will

234 receive a second survey invitation via email, asking them to rate the revised items in terms of clarity,

235 relevance, and importance using the 4-point CVI scale and propose item revisions. A 2-week

236 timeframe will be allotted for experts to complete the Round 2 survey, following which the survey

237 will be closed, and the results will be exported into Microsoft Excel. Reminder emails will be sent to

238 participants on days 5 and 12 of the Round 2 survey if they have not participated.

239

240 **Data Analysis**

241 *Content validity*

242 The current study will incorporate the content validity index (CVI) as a verified approach for

243 evaluating content validity.[20] The CVI index comprises two computed components: the Item-CVI (I-

244 CVI) and the Scale-level-CVI (S-CVI).[20] To compute the I-CVI, the number of Delphi panel experts

245 assigning a "very relevant" rating to each item is divided by the total number of experts, resulting in

246 values ranging from 0 to 1. An I-CVI surpassing 0.79 deems the item relevant, while values falling

247 between 0.70 and 0.79 indicate the need for item revisions; I-CVI values below 0.70 warrant item

248 elimination.[20] Likewise, the S-CVI is determined based on the count of items within a tool that attain a

249 "very relevant" rating.[20] To measure the S-CVI, the Universal Agreement (UA) among experts (S-

250 CVI/UA) will be used. The S-CVI/UA involves summing all items with an I-CVI of 1 and dividing by

251 the total number of items, with the ab S-CVI/UA of ≥ 0.8 denoting excellent content validity.[21]

252

253 *Round 1:* The demographic and Delphi survey data will be analysed descriptively using Microsoft

254 Excel. Expert responses to the item-level CVI (I-CVI) scales will be binary coded as 0 for "not or

255 somewhat relevant/important/clear" and 1 for "quite or highly relevant/important/clear." An I-CVI

256 score will then be computed for each item, representing the proportion of experts scoring 1 out of the

257 total number of experts in the Round 1 sample.[19] Items meeting a score of ≥ 0.80 for each of relevance,

258 importance, and clarity (without revision suggestions) will be retained for the final version of the

9

259 RCSM – QF.20 Items achieving scores of ≥0.80 for each of relevance, importance, and clarity (with

260 revision suggestions), or ≥0.80 for relevance and importance but <0.80 for clarity, will undergo

261 revision by the research team based on expert feedback and will subsequently be included in the

262 Round 2 survey. Items obtaining scores of <0.80 for each of relevance, importance, and clarity will be

263 removed from the RCSM-QF. The research team will also consider suggestions provided by experts

264 concerning modifications to domain names, domain definitions, and missing items.

265

266 *Round 2:* The Round 2 questionnaire results analysis will adhere to the same methodology as in

267 Round 1. The research team will thoroughly review additional suggestions for item revisions before

268 implementing further RCSM- QF modifications. A scale-level CVI (S-CVI) score will also be

269 calculated by averaging the I-CVI scores for all items included in the final RCSM-QF.[20]

270

271 **Ethics and Dissemination**

272 The James Cook University Human Research Ethics Committee (HREC) approved this study's ethics

273 on 14 November 2023. The current project has been deemed 'negligible risk' by the HREC, as there is

274 no foreseeable risk of harm or discomfort to the participants other than the inconvenience of

275 completing the questionnaire. A potential risk of this study is difficulties in recruiting the required

276 numbers for this research, which might pose a risk to study completion. If this is the case, alternative

277 recruitment methods will be considered, including broadening networks to include other professional

278 roles and organisations operating within the Australian aged care sector.

279

280 Data will be prepared for submission to an appropriate peer-reviewed journal and presentation at

281 relevant academic conferences, including the Australian Association of Gerontology Conference

282 [2024]. In addition to the International Journal of Healthcare Management, where a large body of

283 literature regarding aged care management and quality of care is published, several additional avenues

284 have been identified to add variety to the audience accessing the project's findings. Given that this

285 research focuses on senior managers in the aged care setting, targeted journals include the

286 Australasian Journal on Ageing, Journal of Ageing and Health and BMC Health Services Research or

287 BMJ Open.

288 Patient and Public Involvement

289 This research project was designed without direct patient or public involvement in several key

290 aspects, including determining research priorities, defining research questions, selecting outcome

291 measures and contributing to study design. It is recognised that including patient and public

292 perspectives can significantly enhance the relevance, quality, and applicability of research outcomes,

293 and their absence in this study might have implications for the comprehensiveness and relevance of

294 our findings.

295 Discussion

296 Senior managers are central in promoting and protecting quality of care in clinically and

297 administratively complex residential aged care services settings.[8] Yet globally and in Australia, there

298 remain significant gaps in knowledge regarding the specific competencies and skills required of this

299 leadership cohort.[8] This study aims to establish the validity of a novel leadership competency

300 framework, which could provide a practical tool for national regulatory and professional bodies by

301 defining and describing the specific skills, behaviours, knowledge, and experience needed by aspiring

302 and current senior managers. It may also inform the development of quality indicators to inform

303 competency-based performance evaluations of senior managers within their current roles.

304

305 Evidence-based leadership competency frameworks provide a standardised and consistent approach to

306 leadership development across multiple health settings.[22] Once validated for acceptability and

307 applicability, the RCSM-QF competencies may assist residential aged-care organisations in

308 establishing a consistent promotion criterion that incorporates demonstrated excellence by senior

309 managers who consistently lead high-quality healthcare operations within their respective

310 organisations. In doing so it could provide a valuable tool for self-reflection to identify knowledge

311 and skill gaps and guide future training and other career progression opportunities.

312

11

313 The RCSM-QF also offers a set of skills and personal qualities that could inform the development of

314 future courses or qualifications to develop the competencies required by aspiring managers to promote

315 quality of care within their respective organisations and across the broader aged care sector. This

316 focus on quality and continuous improvement may drive organisational excellence for the quality of

317 care, enhance resident health outcomes, and foster a culture of accountability and innovation within

318 Australian residential aged care organisations.[23] This work thus not only addresses key gaps in the

319 literature and evidence base regarding senior management competencies but represents an essential

320 and timely first step in responding to Royal Commission recommendations to strengthen leadership in

321 the sector.

322

323 As with a majority of studies, the design of the current study is subject to limitations. Firstly,

324 purposive sampling was used to recruit interview participants from three categories of experts (peak

325 bodies, PHNs, and researchers); however, it is possible that not all participants will participate due to

326 scheduling or other issues. It is expected, therefore, that the final sample of experts may introduce an

327 element of bias and not always represent the diverse range of perspectives across multiple

328 professional roles within the Australian aged care sector. For example, suppose a majority of study

329 participants were provider advocates whose primary focus is to support the viability and sustainability

330 of aged care service providers. In that case, experts are potentially less likely to consider the resident

331 experience and personalised healthcare needs. Conversely, consumer advocates play an important role

332 in advocating for the older person and speaking on behalf of that individuals in a way that best

333 represents their interests. With an intense focus on the individualised healthcare needs of older

334 Australians, consumer advocates may have less understanding of the structural elements that

335 adversely influence RAC quality and the leadership competencies required.

336

337 While the modified Delphi process is a popular design used for research involving framework

338 validation, some potential limitations within the proposed research are evident.[24] Firstly, the Delphi

339 process is largely based on expert opinions rather than empirical evidence, and while these opinions

340 can be valuable, they may not always align with objective facts or data. [25] This can limit the validity

12

341 and reliability of the framework validation process, particularly if more empirical evidence is needed

342 to support the experts' judgments. A further potential limitation of the study design is that experts

343 provide their input individually and anonymously.[26] The Delphi process, therefore, lacks direct

344 interaction among experts, which can restrict the opportunity for in-depth discussions, debates, and

345 exchanging ideas.[26] Consequently, the method may not capture the full complexity of the research

346 problem or allow for exploring alternative perspectives.[25] Depending on the findings from this study,

347 future phases of this programme of work may involve qualitative methods to address this limitation.

348 These sessions would involve Australian aged care industry experts with varying opinions and

349 perceptions to allow real-time feedback, in-depth insights and rich qualitative data regarding the

350 applicability of the RCSM-QF implementation within the Australian residential aged care setting.[27]

351

352 **List of abbreviations**

353 *ACLQF* – Aged Care Clinical Leadership Quality Framework

354 *ACSA* – Aged and Community Services Australia

355 *RCSM* – QF – Residential Aged Care Senior Management Quality Framework

356 *HLA* – Healthcare Leadership Alliance

357 *IPEC* – Interprofessional Education Collaborative

358 *CVI* - Content Validity Index

359 *S - CVI* – Scale level content Validity Index

360 *I – CVI* – Item Content Validity Index

361

Declarations

Ethics approval

Ethics approval is yet to be received for this study. An ethics application for this study was diligently

prepared and submitted to the James Cook University Human Research Ethics Committee on 04

August 2023. Once approved, all methods will be carried out in accordance with relevant guidelines

and regulations.

Consent for publication.

No participants were recruited or involved in the research process, so no individual consent for

publication was required. Informed consent will be obtained from all subjects and/or their legal

guardian (s) upon commencement of data collection activities.

Availability of data and materials

Previous datasets used and analysed to form the study protocol are available from the corresponding

author upon reasonable request.

Competing Interests Statement

No potential conflict of interest was reported by the authors

Authors' contributions

ND conducted the primary manuscript draft. ND, ST and OA completed subsequent manuscript

revisions. All authors read and approved the final manuscript.

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Validation of a national leadership framework to promote and protect quality residential aged care: Protocol for a Delphi study

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49 # Validation of a national leadership framework to promote

50 # and protect quality residential aged care: ~~Study~~

51 # ~~protocol~~Protocol for a Delphi study

52

53 ## Abstract

54 **Introduction:** Australia's aging population is driving an increased demand for residential aged care

55 services, yet concerns about the quality and safety of such care remain. The recent Royal Commission

56 into Aged Care Quality and Safety identified various limitations relating to leadership within these

57 services. While some competency frameworks exist globally, there is a need for sector-specific

58 leadership competencies in the Australian residential aged care setting to promote and protect quality

59 of care.

60

61 **Methods and Analysis:** This study uses the Delphi technique to establish the content validity of a

62 national leadership framework (RCSM-QF) for promoting and protecting the quality of residential

63 aged care in Australia. Participants will be ~~self- or other-identified aged care~~ identifiable experts

64 through current employment within, policy development for, or research with the aged care sector ~~and~~

65 ~~have knowledge and experience in aged care~~. The survey will ask participants to rate the relevance,

66 importance, and clarity of RCSM-QF items and their corresponding descriptions, and seek

67 suggestions for revisions ~~and~~or additional items. Content validity will be assessed using the Content

68 Validity Index (CVI), with items meeting specific criteria retained, revised, or removed. ~~This study~~

69 ~~aims to establish the content validity of a national leadership framework (RCSM-QF) for promoting~~

70 ~~and protecting the quality of residential aged care in Australia. The research will involve a two-round~~

71 ~~Delphi survey with aged care experts to rate the relevance, importance, and clarity of RCSM-QF~~

72 ~~items and their descriptions. The study will also seek suggestions for revisions and additional items.~~

73 ~~Content validity will be assessed using the Content Validity Index (CVI), with items meeting specific~~

2

74 ~~criteria retained, revised, or removed. Ethics approval has been sought to ensure the well-being and~~

75 ~~convenience of participants while mitigating potential recruitment challenges.~~

76

77

78 **Discussion:** This research addresses the need for a comprehensive leadership competency

79 framework for Australian residential aged care senior managers. It seeks to validate the RCSM-QF

80 framework, which can define and describe the competencies required by senior managers and inform

81 quality indicators for performance evaluations. Such evidence-based frameworks can standardise

82 leadership development and promote consistency in healthcare operations. Additionally, the RCSM-

83 QF may guide training and career progression opportunities, fostering a culture of quality and

84 accountability in the aged care sector. However, the study acknowledges potential limitations,

85 including sampling bias and the reliance on expert opinions in the Delphi process, but aims to mitigate

86 these through focus groups for richer insights in subsequent phases of this work.

87

88 **Keywords:** residential aged care, quality, leadership, senior managers, validation

89

90 **Strengths**

91 - Purposive sampling will be used as a targeted recruitment method for interviewing

92   participants from peak bodies, primary health networks, and researchers, allowing for diverse

93   expert perspectives within the Australian aged care sector.

94 - The Delphi method is a popular tool for framework validation in research, allowing for

95   structured input from Auatrliaa aged care experts to refine and validate the preliminary

96   framework.

97 **Limitations**

98 - The Delphi process is based on subjective opinions rather than empirical evidence, potentially

99   affecting the validity and reliability of the framework validation process.

3

100 • To address limitations in the Delphi process, future phases of the research may require

101 qualitative methods to allow for real-time feedback and in-depth insights from a wider range

102 of industry experts.

103 • The anonymous nature of the Delphi process limits in-depth discussions, debates, and the

104 exchange of ideas, potentially restricting the exploration of alternative perspectives regarding

105 the leadership competencies influencing the quality of Australian residential aged care

106 services.

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110

111

112 **Introduction**

113 Australia's population is ageing, with the proportion of people aged 65 years or over projected to

114 increase from 16% (2018) to 23% in 2066. (1) In line with national ageing trends, the demand for

115 Australian residential aged care services is also increasing, (2) and there have been ongoing concerns

116 about the quality and safety of that care. (3) Indeed, the recent Royal Commission into Aged Care

117 Quality and Safety described a "cruel and harmful" national aged care system comprising services

118 that were "neglectful" and "woefully inadequate". (4) The leadership of these services, including

119 'ground-level' residential aged care senior management teams, was described as "lacking", and

120 leadership competencies for promoting quality of care were found to be "poorly defined". (4) The

121 lack of any sector-specific professional development or leadership framework to guide the acquisition

122 of these required skills within the Australian residential aged-care setting is a concern. (5)

123

124 Existing studies have generated some knowledge regarding leadership requirements, and some

125 competency frameworks exist for aged care services globally, although evidence gaps remain.

126 Seminal work in Australian aged care leadership was conducted by Jeon et al. (2015) in validating a

4

127   clinical leadership framework, the Aged care *Clinical* Leadership Qualities Framework (ACLQF), for

128   middle (mainly clinical) managers in both community-based and residential aged care services. (6) in

129   2014, Aged & Community Services Australia (ACSA) developed the Australian Aged Care

130   Leadership Capability Framework. While this framework reflected an important step forward, its

131   inclusion of different leadership levels (e.g. frontline, middle- and senior managers) and multiple

132   service types (residential, acute and community-based) meant it was necessarily general in nature,

133   with limited specificity concerning the multi-faceted and increasingly demanding nature of residential

134   aged care facilities. (7) Furthermore, the ACSA framework describes leadership capabilities

135   (statements of behaviours, skills, and knowledge that affect an outcome) but not competencies (a

136   measure or index of how well a person performs that capability) and does not explicitly link these to

137   promoting quality care.

138

139   With an absence of competency-based frameworks specific to the Australian residential aged care

140   setting, there is a clear need to describe and model the competencies required by leadership teams to

141   provide effective leadership within this increasingly complex environment. A recent programme of

142   work identified the knowledge, skills and abilities ~~needed by senior managers~~senior managers need to

143   promote and protect quality residential aged care. (8) ~~8~~ Competencies were to form a preliminary

144   leadership competency framework, The Residential Aged Care Senior Manager Quality Framework

145   (RCSM-QF). (8) ~~8~~ The RCSM-QF comprises two key elements: personal qualities and leadership

146   skills. Leadership skills are broken down into five domains, including i) culture and environment, ii)

147   stakeholder relations, iii) clinical and aged care expertise, iv) asset management, and iv) disaster and

148   change management (Figure 1.) This original and empirically grounded competency framework

149   synthesised Australian senior managers' skills and personal qualities to promote and protect the

150   quality of care in the residential aged care setting. Its formation drew on the experiences and strategic

151   insights of senior managers themselves and Australian industry experts. (8) ~~8~~ These empirically

152   derived leadership competencies were compared with those extracted from pre-existing senior-

153   management-relevant leadership frameworks, including the HLA Competency Directory, (9)~~ry,9~~

5

154 IPEC Core Competencies, (10),¹⁰ and Master Health Service Management Competency Framework

155 (11)k ¹¹ to form a novel (though untested) competency framework.

156

157

158 Although the formation of the preliminary RCSM-QF is a step in addressing the evidence gap relating

159 to sector-specific leadership competencies and professional development requirements for senior

160 managers to promote quality of care, it has not been applied or tested in the Australian residential

161 aged care setting nor the competencies empirically validated. Therefore, the accuracy and usefulness

162 of the RCSM-QF for describing and helping assess the leadership competencies required by senior

163 managers across Australia are not yet confirmed.

164

165 **[INSERT FIRGURE 1. HERE]**

166

167

168 Figure 1. The preliminary Residential Aged Care Senior Manager Quality Framework (RCSM-

169 QF)

170 Figure 1. The preliminary Residential Aged Care Senior Manager Quality Framework (RCSM-

171 QF).

172 This study aims to establish the content validity of the preliminary RCSM-QF within the Australian

173 residential aged care context using a modified Delphi process. Once this validity is established, this

174 programme of work could provide a practical tool to form a professional development infrastructure

175 for current and aspiring Australian residential aged care senior managers who continue to operate

176 within this increasingly complex environment.

177

Methods and Analysis

179 Aim: To establish the content validity of a national leadership framework to promote and protect the

180 quality of residential aged care in Australia

181

Objectives:

1. Rate the relevance, importance and clarity of RCSM-QF items [competencies OR personal qualities] and their descriptions using a 4-point Content Validity Index (CVI) scale

2. Suggest RCSM-QF item and description scale revisions.

3. Suggest RCSM-–QF domain name and domain definition revisions and

4. Suggest additional items [competencies or personal qualities] for the RCSM-–QF

188

189

Study Design

Content validity refers to the extent to which a measurement tool, such as a test or assessment, accurately represents the specific content it is intended to measur~~measure. (12)~~e. [12] Content validity is an important aspect of validating a leadership competency.[13] . (13) In the context of the current research, the method will assess whether the RCSM-–QF accurately and comprehensively represents the key competencies required for effective leadership within the Australian residential aged care setting. We will evaluate content validity using the Delphi survey technique and a Content Validity Index (CVI). The Delphi technique is a widely used method for achieving consensus. (14) .[14] It uses a series of questionnaires to collect information from participants in ~~a number of~~several iterations, or 'rounds'. The starting point is an open questionnaire or a pre-derived list of questions, (15) s.[15] Following each round, each participant receives an individualised report of their responses to the group response.[15] (15) In subsequent rounds, participants can reassess their responses in light of this information.[14] . (14) The process allows for a controlled debate and for consensus to build without necessitating group interaction, an advantage in the context of geographically dispersed and time-constrained experts. It also limits the time and resources required to plan and facilitate group interactions and the bias from dominant individuals within this consensus-building phase.[14] . (14)

206

7

Study setting

The current study will be completed with representatives who contribute to or advise regarding the delivery of aged care services in Australia. Examples of different 'levels' of aged care include: i) entry-level community-based care at home; ii) higher levels of care at home (Home Care Packages Program), and when living at home is not an option; iii) residential aged care. [16] This study focuses specifically on the role of senior managers in providing quality care in the Australian residential aged care setting. Residential aged care provides health care services and accommodation for older people who are unable to continue living independently in their own homes. [17]

In Australia, residential aged care providers can span a range of different sectors, including religious, charitable, community, for-profit and government organisations. [17] Typical services may include accommodation, personal care assistance, clinical care and a range of social care activities, including recreational activities and emotional support. Approximately 250,000 older Australians received permanent residential aged care at some time during the financial year 2021/2022. [1]

Participant recruitment

To be eligible for participation, panel participants will need to be self- or other-identified aged care experts through current employment within the aged care sector and have high-level knowledge and experience in aged care. Expertise may include clinical practice, management, service delivery, policy, research and education or combinations of the above. From previous work, this study will target five major groupings of expert representatives, including peak advocacy bodies, primary health network representatives, members of state and federal government, aged care researchers and residential aged care executives and governing board members spanning multiple organisation types (non-for-profit, for-profit, non-governmental [NGO], and government-operated). [8] Purposive sampling will be used to ensure that rural, remote, and metropolitan settings across Australia are represented on the panel. Purposive sampling will also allow the identification and selection of information-rich participants from the expert groupings with knowledge and experience working

234   within the Australian aged care sector.¹⁸. (18) Participant selection will be purposive, and aged care

235   industry experts will be recognised as possessing specific knowledge of the health service needs of

236   older persons in Australia and capable of reflecting critically on the link between senior manager

237   leadership skills and quality residential aged care.

238

239   A list of eligible participants will be generated using a combination of investigators' aged care

240   industry experience and a comprehensive desk search. Participants will be emailed an invitation for

241   involvement in *Round 1* and followed up by phone if a response has not been received in two weeks.

242   Participants will provide electronic consent before commencing the questionnaire.

243

244   **Data collection**

245   *Round 1:* In reviewing, modifying and validating the RCSM-QF, two rounds of iterative consultation

246   will be undertaken with the Delphi panel via email. In round one, experts will be sent email

247   invitations to participate. Upon clicking the survey link, participants will be redirected to an online

248   platform where they will be asked to confirm their consent to participate and will rate each item and

249   its response scale based on clarity, relevance, and importance using a 4-point CVI scale where 1 = not

250   clear/relevant/important, 2 = somewhat clear/relevant/important, 3 = quite clear/relevant/important,

251   and 4 = highly clear/relevant/important.¹⁹. (19) Through open dialogue boxes, experts will also

252   provide suggestions for item wording, domain name, and domain definition revisions and propose

253   additional items for any missing experiential aspects of care. Demographic questions will include

254   gender, year of birth, highest educational qualification, place of work and current professional role.

255   Experts will be given a 2-week window to complete the Round 1 survey, ~~following~~ after which the

256   survey will be closed, and the results will be exported into Microsoft Excel. Reminder emails will be

257   dispatched to participants on days 5 and 12 of the Round 1 questionnaire if they have not taken part.

258

259   *Round 2:* The second round will commence 1 week after the conclusion of Round 1. Experts will

260   receive a second survey invitation via email, asking them to rate the revised items in terms of clarity,

9

261 relevance, and importance using the 4-point CVI scale and propose item revisions. A 2-week

262 timeframe will be allotted for experts to complete the Round 2 survey, following which the survey

263 will be closed, and the results will be exported into Microsoft Excel. Reminder emails will be sent to

264 participants on days 5 and 12 of the Round 2 survey if they have not participated.

265

266 **Data Analysis**

267 *Content validity*

268 The current study will incorporate the content validity index (CVI) as a verified approach for

269 evaluating content validity. [20]. (20) The CVI index comprises two computed components: the Item-

270 CVI (I-CVI) and the Scale-level-CVI (S-CVI). [20]. (20) To compute the I-CVI, the number of Delphi

271 panel experts assigning a "very relevant" rating to each item is divided by the total number of experts,

272 resulting in values ranging from 0 to 1. An I-CVI surpassing 0.79 deems the item relevant, while

273 values falling between 0.70 and 0.79 indicate the need for item revisions; I-CVI values below 0.70

274 warrant item elimination. [20]. (20) Likewise, the S-CVI is determined based on the count of items

275 within a tool that attain a "very relevant" rating. [20]. (20) To measure the S-CVI, the Universal

276 Agreement (UA) among experts (S-CVI/UA) will be used. The S-CVI/UA involves summing all

277 items with an I-CVI of 1 and dividing by the total number of items, with the ab S-CVI/UA of ≥ 0.8

278 denoting excellent content validity. [21]. (21)

279

280 *Round 1:* The demographic and Delphi survey data will be analysed descriptively using Microsoft

281 Excel. Expert responses to the item-level CVI (I-CVI) scales will be binary coded as 0 for "not or

282 somewhat relevant/important/clear" and 1 for "quite or highly relevant/important/clear." An I-CVI

283 score will then be computed for each item, representing the proportion of experts scoring 1 out of the

284 total number of experts in the Round 1 sample. [19]. (19) Items meeting a score of ≥ 0.80 for each of

285 relevance, importance, and clarity (without revision suggestions) will be retained for the final version

286 of the RCSM – QF.20 Items achieving scores of ≥ 0.80 for each of relevance, importance, and clarity

287 (with revision suggestions), or ≥ 0.80 for relevance and importance but <0.80 for clarity, will undergo

288 revision by the research team based on expert feedback and will subsequently be included in the

289 Round 2 survey. Items obtaining scores of <0.80 for each of relevance, importance, and clarity will be

290 removed from the RCSM-QF. The research team will also consider suggestions provided by experts

291 concerning modifications to domain names, domain definitions, and missing items.

292

293 *Round 2:* The Round 2 questionnaire results analysis will adhere to the same methodology as in

294 Round 1. The research team will thoroughly review additional suggestions for item revisions before

295 implementing further RCSM--QF modifications. A scale-level CVI (S-CVI) score will also be

296 calculated by averaging the I-CVI scores for all items included in the final RCSM-QF.[20]. (20) Delphi

297 studies are typically carried out in two to three rounds with a deliberately selected panel of experts.

298 (14) In the current study, a third round of consultation will be administered if few items achieve

299 scores of ≥0.80 for relevance, importance, and clarity. In this third round, data collection and analysis

300 processes will replicate those of the previous rounds.

301

302 **Ethics and Dissemination**

303 The James Cook University Human Research Ethics Committee (HREC) approved this study's ethics

304 on 14 November 2023. The current project has been deemed 'negligible risk' by the HREC, as there is

305 no foreseeable risk of harm or discomfort to the participants other than the inconvenience of

306 completing the questionnaire. A potential risk of this study is difficulties in recruiting the required

307 numbers for this research, which might pose a risk to study completion. If this is the case, alternative

308 recruitment methods will be considered, including broadening networks to include other professional

309 roles and organisations operating within the Australian aged care sector.

310

311 Data will be prepared for submission to an appropriate peer-reviewed journal and presentation at

312 relevant academic conferences, including the Australian Association of Gerontology Conference

313 [2024]. In addition to the International Journal of Healthcare Management, where a large body of

314 literature regarding aged care management and quality of care is published, several additional avenues

11

315 have been identified to add variety to the audience accessing the project's findings. Given that this

316 research focuses on senior managers in the aged care setting, targeted journals include the

317 Australasian Journal on Ageing, Journal of Ageing and Health and BMC Health Services Research or

318 BMJ Open.

319

Patient and Public Involvement

321 This research project was designed without direct patient or public involvement in several key

322 aspects, including determining research priorities, defining research questions, selecting outcome

323 measures and contributing to study design. It is recognised that including patient and public

324 perspectives can significantly enhance the relevance, quality, and applicability of research outcomes,

325 and their absence in this study might have implications for the comprehensiveness and relevance of

326 our findings.

327

Discussion

329 Senior managers are central in promoting and protecting quality of care in clinically and

330 administratively complex residential aged care services settings. [8]. (8) Yet globally and in Australia,

331 there remain significant gaps in knowledge regarding the specific competencies and skills required of

332 this leadership cohort. [8]. (8) This study aims to establish the validity of a novel leadership competency

333 framework, which could provide a practical tool for national regulatory and professional bodies by

334 defining and describing the specific skills, behaviours, knowledge, and experience needed by aspiring

335 and current senior managers. It may also inform the development of quality indicators to inform

336 competency-based performance evaluations of senior managers within their current roles.

337

338 Evidence-based leadership competency frameworks provide a standardised and consistent approach to

339 leadership development across multiple health settings. [22]. (22) Once validated for acceptability and

340 applicability, the RCSM-QF competencies may assist residential aged-care organisations in

341 establishing a consistent promotion criterion that incorporates demonstrated excellence by senior

342 managers who consistently lead high-quality healthcare operations within their respective

12

343 organisations. In doing so it could provide a valuable tool for self-reflection to identify knowledge

344 and skill gaps and guide future training and other career progression opportunities.

345

346 The RCSM-QF also offers a set of skills and personal qualities that could inform the development of

347 future courses or qualifications to develop the competencies required by aspiring managers to promote

348 quality of care within their respective organisations and across the broader aged care sector. This

349 focus on quality and continuous improvement may drive organisational excellence for the quality of

350 care, enhance resident health outcomes, and foster a culture of accountability and innovation within

351 Australian residential aged care organisations.~~23~~. (23) This work thus not only addresses key gaps in

352 the literature and evidence base regarding senior management competencies but represents an

353 essential and timely first step in responding to Royal Commission recommendations to strengthen

354 leadership in the sector.

355

356 As with a majority of studies, the design of the current study is subject to limitations. Firstly,

357 purposive sampling was used to recruit interview participants from three categories of experts (peak

358 bodies, PHNs, and researchers); however, it is possible that not all participants will participate due to

359 scheduling or other issues. It is expected, therefore, that the final sample of experts may introduce an

360 element of bias and not always represent the diverse range of perspectives across multiple

361 professional roles within the Australian aged care sector. For example, suppose a majority of study

362 participants were provider advocates whose primary focus is to support the viability and sustainability

363 of aged care service providers. In that case, experts are potentially less likely to consider the resident

364 experience and personalised healthcare needs. Conversely, consumer advocates play an important role

365 in advocating for the older person and speaking on behalf of that individuals in a way that best

366 represents their interests. With an intense focus on the individualised healthcare needs of older

367 Australians, consumer advocates may have less understanding of the structural elements that

368 adversely influence RAC quality and the leadership competencies required.

369

13

370 While the modified Delphi process is a popular design used for research involving framework

371 validation, some potential limitations within the proposed research are evident.[24]. (24) Firstly, the

372 Delphi process is largely based on expert opinions rather than empirical evidence, and while these

373 opinions can be valuable, they may not always align with objective facts or data. (25).[25] This can

374 limit the validity and reliability of the framework validation process, particularly if more empirical

375 evidence is needed to support the experts' judgments. A further potential limitation of the study design

376 is that experts provide their input individually and anonymously.[26]. (26) The Delphi process,

377 therefore, lacks direct interaction among experts, which can restrict the opportunity for in-depth

378 discussions, debates, and exchanging ideas.[26]. (26) Consequently, the method may not capture the full

379 complexity of the research problem or allow for exploring alternative perspectives.[25]. (25) Depending

380 on the findings from this study, future phases of this programme of work may involve qualitative

381 methods to address this limitation. These sessions would involve Australian aged care industry

382 experts with varying opinions and perceptions to allow real-time feedback, in-depth insights and rich

383 qualitative data regarding the applicability of the RCSM-QF implementation within the Australian

384 residential aged care setting.[27]

385

386 **List of abbreviations**

387 *ACLQF* – Aged Care Clinical Leadership Quality Framework

388 *ACSA* – Aged and Community Services Australia

389 *RCSM – QF* – Residential Aged Care Senior Management Quality Framework

390 *HLA* – Healthcare Leadership Alliance

391 *IPEC* – Interprofessional Education Collaborative

392 *CVI* - Content Validity Index

393 *S - CVI* – Scale level content Validity Index

394 *I – CVI* – Item Content Validity Index

14

395

Declarations

Ethics approval

398 Ethics approval ~~is yet to be received for this study~~was received from the ~~. An ethics application for~~

399 ~~this study was diligently prepared and submitted to the~~ James Cook University Human Research

400 Ethics Committee on 23~~04~~ November~~August~~ 2023 **[H9265]**. ~~Once approved,~~ Aall methods will be

401 carried out in accordance with relevant guidelines and regulations.

Consent for publication.

403 No participants were recruited or involved in the research process, so no individual consent for

404 publication was required. Informed consent will be obtained from all subjects and/or their legal

405 guardian (s) upon commencement of data collection activities.

Availability of data and materials

407 Previous datasets used and analysed to form the study protocol are available from the corresponding

408 author upon reasonable request.

Competing Interests Statement

410 No potential conflict of interest was reported by the authors

Authors' contributions

412 ND conducted the primary manuscript draft. ND, ST and OA completed subsequent manuscript

413 revisions. All authors read and approved the final manuscript.

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Figure 1. The preliminary Residential Aged Care Senior Manager Quality Framework (RCSM-QF). *Source: Authors own figure*

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Validation of a national leadership framework to promote and protect quality residential aged care: Protocol for a Delphi study

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Validation of a national leadership framework to promote and protect quality residential aged care: Protocol for a Delphi study

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45 # Validation of a national leadership framework to promote

46 # and protect quality residential aged care: Protocol for a

47 # Delphi study

48

49 ## Abstract

50 **Introduction:** Australia's aging population is driving an increased demand for residential aged care

51 services, yet concerns about the quality and safety of such care remain. The recent Royal Commission

52 into Aged Care Quality and Safety identified various limitations relating to leadership within these

53 services. While some competency frameworks exist globally, there is a need for sector-specific

54 leadership competencies in the Australian residential aged care setting to promote and protect quality

55 of care.

56

57 **Methods and Analysis:** This study uses the Delphi technique to establish the content validity of a

58 national leadership framework (RCSM-QF) for promoting and protecting the quality of residential

59 aged care in Australia. Participants will be identifiable experts through current employment within,

60 policy development for, or research with the aged care sector. The survey will ask participants to rate

61 the relevance, importance, and clarity of RCSM-QF items and their corresponding descriptions, and

62 seek suggestions for revisions or additional items. Content validity will be assessed using the Content

63 Validity Index (CVI), with items meeting specific criteria retained, revised, or removed.

64

65 **Discussion:** This research addresses the need for a comprehensive leadership competency

66 framework for Australian residential aged care senior managers. It seeks to validate the RCSM-QF

67 framework, which can define and describe the competencies required by senior managers and inform

68 quality indicators for performance evaluations. Such evidence-based frameworks can standardise

69 leadership development and promote consistency in healthcare operations. Additionally, the

70 RCSMQF may guide training and career progression opportunities, fostering a culture of quality and

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71 accountability in the aged care sector. However, the study acknowledges potential limitations,

72 including sampling bias and the reliance on expert opinions in the Delphi process, but aims to mitigate

73 these through focus groups for richer insights in subsequent phases of this work.

74

75 **Keywords:** residential aged care, quality, leadership, senior managers, validation

76

77 **Strengths**

78 • Purposive sampling will be used as a targeted recruitment method for interviewing

79 participants from peak bodies, primary health networks, and researchers, allowing for diverse

80 expert perspectives within the Australian aged care sector.

81 • The Delphi method is a popular tool for framework validation in research, allowing for

82 structured input from Auatrliaa aged care experts to refine and validate the preliminary

83 framework.

84 **Limitations**

85 • The Delphi process is based on subjective opinions rather than empirical evidence, potentially

86 affecting the validity and reliability of the framework validation process.

87 • To address limitations in the Delphi process, future phases of the research may require

88 qualitative methods to allow for real-time feedback and in-depth insights from a wider range

89 of industry experts.

90 • The anonymous nature of the Delphi process limits in-depth discussions, debates, and the

91 exchange of ideas, potentially restricting the exploration of alternative perspectives regarding

92 the leadership competencies influencing the quality of Australian residential aged care

93 services.

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3

98   **Introduction**

99   Australia's population is ageing, with the proportion of people aged 65 years or over projected to

100   increase from 16% (2018) to 23% in 2066. (1) In line with national ageing trends, the demand for

101   Australian residential aged care services is also increasing, (2) and there have been ongoing concerns

102   about the quality and safety of that care. (3) Indeed, the recent Royal Commission into Aged Care

103   Quality and Safety described a "cruel and harmful" national aged care system comprising services

104   that were "neglectful" and "woefully inadequate". (4) The leadership of these services, including

105   'ground-level' residential aged care senior management teams, was described as "lacking", and

106   leadership competencies for promoting quality of care were found to be "poorly defined". (4) The

107   lack of any sector-specific professional development or leadership framework to guide the acquisition

108   of these required skills within the Australian residential aged-care setting is a concern. (5)

109

110   Existing studies have generated some knowledge regarding leadership requirements, and some

111   competency frameworks exist for aged care services globally, although evidence gaps remain.

112   Seminal work in Australian aged care leadership was conducted by Jeon et al. (2015) in validating a

113   clinical leadership framework, the Aged care *Clinical* Leadership Qualities Framework (ACLQF), for

114   middle (mainly clinical) managers in both community-based and residential aged care services. (6) in

115   2014, Aged & Community Services Australia (ACSA) developed the Australian Aged Care

116   Leadership Capability Framework. While this framework reflected an important step forward, its

117   inclusion of different leadership levels (e.g. frontline, middle- and senior managers) and multiple

118   service types (residential, acute and community-based) meant it was necessarily general in nature,

119   with limited specificity concerning the multi-faceted and increasingly demanding nature of residential

120   aged care facilities. (7) Furthermore, the ACSA framework describes leadership capabilities

121   (statements of behaviours, skills, and knowledge that affect an outcome) but not competencies (a

122   measure or index of how well a person performs that capability) and does not explicitly link these to

123   promoting quality care.

124

4

125   With an absence of competency-based frameworks specific to the Australian residential aged care

126   setting, there is a clear need to describe and model the competencies required by leadership teams to

127   provide effective leadership within this increasingly complex environment. A recent programme of

128   work identified the knowledge, skills and abilities senior managers need to promote and protect

129   quality residential aged care. (8) Competencies were to form a preliminary leadership competency

130   framework, The Residential Aged Care Senior Manager Quality Framework (RCSM-QF). (8) The

131   RCSM-QF comprises two key elements: personal qualities and leadership skills. Leadership skills are

132   broken down into five domains, including i) culture and environment, ii) stakeholder relations, iii)

133   clinical and aged care expertise, iv) asset management, and iv) disaster and change management

134   (Figure 1.) This original and empirically grounded competency framework synthesised Australian

135   senior managers' skills and personal qualities to promote and protect the quality of care in the

136   residential aged care setting. Its formation drew on the experiences and strategic insights of senior

137   managers themselves and Australian industry experts. (8) These empirically derived leadership

138   competencies were compared with those extracted from pre-existing senior-management-relevant

139   leadership frameworks, including the HLA Competency Directory, (9) IPEC Core Competencies, (10)

140   and Master Health Service Management Competency Framework (11) to form a novel (though

141   untested) competency framework.

142

143   Although the formation of the preliminary RCSM-QF is a step in addressing the evidence gap relating

144   to sector-specific leadership competencies and professional development requirements for senior

145   managers to promote quality of care, it has not been applied or tested in the Australian residential

146   aged care setting nor the competencies empirically validated. Therefore, the accuracy and usefulness

147   of the RCSM-QF for describing and helping assess the leadership competencies required by senior

148   managers across Australia are not yet confirmed.

149

150   **[INSERT FIRGURE 1. HERE]**

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153 This study aims to establish the content validity of the preliminary RCSM-QF within the Australian

154 residential aged care context using a modified Delphi process. Once this validity is established, this

155 programme of work could provide a practical tool to form a professional development infrastructure

156 for current and aspiring Australian residential aged care senior managers who continue to operate

157 within this increasingly complex environment.

158

Methods and Analysis

160 Aim: To establish the content validity of a national leadership framework to promote and protect the

161 quality of residential aged care in Australia

162

Objectives:

164   1. Rate the relevance, importance and clarity of RCSM-QF items [competencies OR personal

165   qualities] and their descriptions using a 4-point Content Validity Index (CVI) scale

166   2. Suggest RCSM-QF item and description scale revisions.

167   3. Suggest RCSM-QF domain name and domain definition revisions and

168   4. Suggest additional items [competencies or personal qualities] for the RCSM-QF

169

Study Design

171 Content validity refers to the extent to which a measurement tool, such as a test or assessment,

172 accurately represents the specific content it is intended to measure. (12) Content validity is an

173 important aspect of validating a leadership competency. (13) In the context of the current research, the

174 method will assess whether the RCSM-QF accurately and comprehensively represents the key

175 competencies required for effective leadership within the Australian residential aged care setting. We

176 will evaluate content validity using the Delphi survey technique and a Content Validity Index (CVI).

177 The Delphi technique is a widely used method for achieving consensus. (14) It uses a series of

178 questionnaires to collect information from participants in several iterations, or 'rounds'. The starting

179 point is an open questionnaire or a pre-derived list of questions, (15) Following each round, each

6

180   participant receives an individualised report of their responses to the group response. (15) In

181   subsequent rounds, participants can reassess their responses in light of this information. (14) The

182   process allows for a controlled debate and for consensus to build without necessitating group

183   interaction, an advantage in the context of geographically dispersed and time-constrained experts. It

184   also limits the time and resources required to plan and facilitate group interactions and the bias from

185   dominant individuals within this consensus-building phase. (14)

186

Study setting

188   The current study will be completed with representatives who contribute to or advise regarding the

189   delivery of aged care services in Australia. Examples of different 'levels' of aged care include: i)

190   entry-level community-based care at home; ii) higher levels of care at home (Home Care Packages

191   Program), and when living at home is not an option; iii) residential aged care. (16) This study focuses

192   specifically on the role of senior managers in providing quality care in the Australian residential aged

193   care setting. Residential aged care provides health care services and accommodation for older people

194   who are unable to continue living independently in their own homes. (17)

195

196   In Australia, residential aged care providers can span a range of different sectors, including religious,

197   charitable, community, for-profit and government organisations. (17) Typical services may include

198   accommodation, personal care assistance, clinical care and a range of social care activities, including

199   recreational activities and emotional support. Approximately 250,000 older Australians received

200   permanent residential aged care at some time during the financial year 2021/2022. (1)

201

Participant recruitment

203   To be eligible for participation, panel participants will need to be self- or other-identified aged care

204   experts through current employment within the aged care sector and have high-level knowledge and

205   experience in aged care. Expertise may include clinical practice, management, service delivery,

206   policy, research and education or combinations of the above. From previous work, this study will

7

207 target five major groupings of expert representatives, including peak advocacy bodies, primary health

208 network representatives, members of state and federal government, aged care researchers and

209 residential aged care executives and governing board members spanning multiple organisation types

210 (non-for-profit, for-profit, non-governmental [NGO], and government-operated). (8) Purposive

211 sampling will be used to ensure that rural, remote, and metropolitan settings across Australia are

212 represented on the panel. Purposive sampling will also allow the identification and selection of

213 information-rich participants from the expert groupings with knowledge and experience working

214 within the Australian aged care sector. (18) Participant selection will be purposive, and aged care

215 industry experts will be recognised as possessing specific knowledge of the health service needs of

216 older persons in Australia and capable of reflecting critically on the link between senior manager

217 leadership skills and quality residential aged care.

218

219 A list of eligible participants will be generated using a combination of investigators' aged care

220 industry experience and a comprehensive desk search. Participants will be emailed an invitation for

221 involvement in *Round 1* and followed up by phone if a response has not been received in two weeks.

222 Participants will provide electronic consent before commencing the questionnaire.

223

224 **Data collection**

225 *Round 1:* In reviewing, modifying and validating the RCSM-QF, two rounds of iterative consultation

226 will be undertaken with the Delphi panel via email. In round one, experts will be sent email

227 invitations to participate. Upon clicking the survey link, participants will be redirected to an online

228 platform where they will be asked to confirm their consent to participate and will rate each item and

229 its response scale based on clarity, relevance, and importance using a 4-point CVI scale where 1 = not

230 clear/relevant/important, 2 = somewhat clear/relevant/important, 3 = quite clear/relevant/important,

231 and 4 = highly clear/relevant/important. (19) Through open dialogue boxes, experts will also provide

232 suggestions for item wording, domain name, and domain definition revisions and propose additional

233 items for any missing experiential aspects of care. Demographic questions will include gender, year of

8

234 birth, highest educational qualification, place of work and current professional role. Experts will be

235 given a 2-week window to complete the Round 1 survey, after which the survey will be closed, and

236 the results will be exported into Microsoft Excel. Reminder emails will be dispatched to participants

237 on days 5 and 12 of the Round 1 questionnaire if they have not taken part.

238

239 *Round 2:* The second round will commence 1 week after the conclusion of Round 1. Experts will

240 receive a second survey invitation via email, asking them to rate the revised items in terms of clarity,

241 relevance, and importance using the 4-point CVI scale and propose item revisions. A 2-week

242 timeframe will be allotted for experts to complete the Round 2 survey, following which the survey

243 will be closed, and the results will be exported into Microsoft Excel. Reminder emails will be sent to

244 participants on days 5 and 12 of the Round 2 survey if they have not participated.

245

246 **Data Analysis**

247 *Content validity*

248 The current study will incorporate the content validity index (CVI) as a verified approach for

249 evaluating content validity. (20) The CVI index comprises two computed components: the Item-CVI

250 (I-CVI) and the Scale-level-CVI (S-CVI). (20) To compute the I-CVI, the number of Delphi panel

251 experts assigning a "very relevant" rating to each item is divided by the total number of experts,

252 resulting in values ranging from 0 to 1. An I-CVI surpassing 0.79 deems the item relevant, while

253 values falling between 0.70 and 0.79 indicate the need for item revisions; I-CVI values below 0.70

254 warrant item elimination. (20) Likewise, the S-CVI is determined based on the count of items within a

255 tool that attain a "very relevant" rating. (20) To measure the S-CVI, the Universal Agreement (UA)

256 among experts (S-CVI/UA) will be used. The S-CVI/UA involves summing all items with an I-CVI

257 of 1 and dividing by the total number of items, with the ab S-CVI/UA of ≥ 0.8 denoting excellent

258 content validity. (21)

259

9

260 *Round 1:* The demographic and Delphi survey data will be analysed descriptively using Microsoft

261 Excel. Expert responses to the item-level CVI (I-CVI) scales will be binary coded as 0 for "not or

262 somewhat relevant/important/clear" and 1 for "quite or highly relevant/important/clear." An I-CVI

263 score will then be computed for each item, representing the proportion of experts scoring 1 out of the

264 total number of experts in the Round 1 sample. (19) Items meeting a score of ≥0.80 for each of

265 relevance, importance, and clarity (without revision suggestions) will be retained for the final version

266 of the RCSM – QF.20 Items achieving scores of ≥0.80 for each of relevance, importance, and clarity

267 (with revision suggestions), or ≥0.80 for relevance and importance but <0.80 for clarity, will undergo

268 revision by the research team based on expert feedback and will subsequently be included in the

269 Round 2 survey. Items obtaining scores of <0.80 for each of relevance, importance, and clarity will be

270 removed from the RCSM-QF. The research team will also consider suggestions provided by experts

271 concerning modifications to domain names, domain definitions, and missing items.

272

273 *Round 2:* The Round 2 questionnaire results analysis will adhere to the same methodology as in

274 Round 1. The research team will thoroughly review additional suggestions for item revisions before

275 implementing further RCSM-QF modifications. A scale-level CVI (S-CVI) score will also be

276 calculated by averaging the I-CVI scores for all items included in the final RCSM-QF. (20) Delphi

277 studies are typically carried out in two to three rounds with a deliberately selected panel of experts.

278 (14) In the current study, a third round of consultation will be administered if few items achieve

279 scores of ≥0.80 for relevance, importance, and clarity. In this third round, data collection and analysis

280 processes will replicate those of the previous rounds.

281

282 **Ethics and Dissemination**

283 The James Cook University Human Research Ethics Committee (HREC) approved this study's ethics

284 on 14 November 2023. The current project has been deemed 'negligible risk' by the HREC, as there is

285 no foreseeable risk of harm or discomfort to the participants other than the inconvenience of

286 completing the questionnaire. A potential risk of this study is difficulties in recruiting the required

287 numbers for this research, which might pose a risk to study completion. If this is the case, alternative

288 recruitment methods will be considered, including broadening networks to include other professional

289 roles and organisations operating within the Australian aged care sector.

290

291 Data will be prepared for submission to an appropriate peer-reviewed journal and presentation at

292 relevant academic conferences, including the Australian Association of Gerontology Conference

293 [2024]. In addition to the International Journal of Healthcare Management, where a large body of

294 literature regarding aged care management and quality of care is published, several additional avenues

295 have been identified to add variety to the audience accessing the project's findings. Given that this

296 research focuses on senior managers in the aged care setting, targeted journals include the

297 Australasian Journal on Ageing, Journal of Ageing and Health and BMC Health Services Research or

298 BMJ Open.

299

Patient and Public Involvement

301 This research project was designed without direct patient or public involvement in several key

302 aspects, including determining research priorities, defining research questions, selecting outcome

303 measures and contributing to study design. It is recognised that including patient and public

304 perspectives can significantly enhance the relevance, quality, and applicability of research outcomes,

305 and their absence in this study might have implications for the comprehensiveness and relevance of

306 our findings.

307

Discussion

309 Senior managers are central in promoting and protecting quality of care in clinically and

310 administratively complex residential aged care services settings. (8) Yet globally and in Australia,

311 there remain significant gaps in knowledge regarding the specific competencies and skills required of

312 this leadership cohort. (8) This study aims to establish the validity of a novel leadership competency

313 framework, which could provide a practical tool for national regulatory and professional bodies by

314 defining and describing the specific skills, behaviours, knowledge, and experience needed by aspiring

11

315 and current senior managers. It may also inform the development of quality indicators to inform

316 competency-based performance evaluations of senior managers within their current roles.

317

318 Evidence-based leadership competency frameworks provide a standardised and consistent approach to

319 leadership development across multiple health settings. (22) Once validated for acceptability and

320 applicability, the RCSM-QF competencies may assist residential aged-care organisations in

321 establishing a consistent promotion criterion that incorporates demonstrated excellence by senior

322 managers who consistently lead high-quality healthcare operations within their respective

323 organisations. In doing so it could provide a valuable tool for self-reflection to identify knowledge

324 and skill gaps and guide future training and other career progression opportunities.

325

326 The RCSM-QF also offers a set of skills and personal qualities that could inform the development of

327 future courses or qualifications to develop the competencies required by aspiring managers to promote

328 quality of care within their respective organisations and across the broader aged care sector. This

329 focus on quality and continuous improvement may drive organisational excellence for the quality of

330 care, enhance resident health outcomes, and foster a culture of accountability and innovation within

331 Australian residential aged care organisations. (23) This work thus not only addresses key gaps in the

332 literature and evidence base regarding senior management competencies but represents an essential

333 and timely first step in responding to Royal Commission recommendations to strengthen leadership in

334 the sector.

335

336 As with a majority of studies, the design of the current study is subject to limitations. Firstly,

337 purposive sampling was used to recruit interview participants from three categories of experts (peak

338 bodies, PHNs, and researchers); however, it is possible that not all participants will participate due to

339 scheduling or other issues. It is expected, therefore, that the final sample of experts may introduce an

340 element of bias and not always represent the diverse range of perspectives across multiple

341 professional roles within the Australian aged care sector. For example, suppose a majority of study

342 participants were provider advocates whose primary focus is to support the viability and sustainability

12

343 of aged care service providers. In that case, experts are potentially less likely to consider the resident

344 experience and personalised healthcare needs. Conversely, consumer advocates play an important role

345 in advocating for the older person and speaking on behalf of that individuals in a way that best

346 represents their interests. With an intense focus on the individualised healthcare needs of older

347 Australians, consumer advocates may have less understanding of the structural elements that

348 adversely influence RAC quality and the leadership competencies required.

349

350 While the modified Delphi process is a popular design used for research involving framework

351 validation, some potential limitations within the proposed research are evident. (24) Firstly, the

352 Delphi process is largely based on expert opinions rather than empirical evidence, and while these

353 opinions can be valuable, they may not always align with objective facts or data. (25) This can limit

354 the validity and reliability of the framework validation process, particularly if more empirical

355 evidence is needed to support the experts' judgments. A further potential limitation of the study design

356 is that experts provide their input individually and anonymously. (26) The Delphi process, therefore,

357 lacks direct interaction among experts, which can restrict the opportunity for in-depth discussions,

358 debates, and exchanging ideas. (26) Consequently, the method may not capture the full complexity of

359 the research problem or allow for exploring alternative perspectives. (25) Depending on the findings

360 from this study, future phases of this programme of work may involve qualitative methods to address

361 this limitation. These sessions would involve Australian aged care industry experts with varying

362 opinions and perceptions to allow real-time feedback, in-depth insights and rich qualitative data

363 regarding the applicability of the RCSM-QF implementation within the Australian residential aged

364 care setting.[27]

365

366 **List of abbreviations**

367 *ACLQF* – Aged Care Clinical Leadership Quality Framework

368 *ACSA* – Aged and Community Services Australia

13

369   *RCSM – QF* – Residential Aged Care Senior Management Quality Framework

370   *HLA* – Healthcare Leadership Alliance

371   *IPEC* – Interprofessional Education Collaborative

372   *CVI* - Content Validity Index

373   *S - CVI* – Scale level content Validity Index

374   *I – CVI* – Item Content Validity Index

375

376   **Declarations**

377   **Ethics approval**

378   Ethics approval was received from the James Cook University Human Research Ethics Committee on

379   23 November 2023 [**H9265**]. All methods will be carried out in accordance with relevant guidelines

380   and regulations.

381   **Consent for publication.**

382   No participants were recruited or involved in the research process, so no individual consent for

383   publication was required. Informed consent will be obtained from all subjects and/or their legal

384   guardian (s) upon commencement of data collection activities.

385   **Availability of data and materials**

386   Previous datasets used and analysed to form the study protocol are available from the corresponding

387   author upon reasonable request.

388   **Competing Interests Statement**

389   No potential conflict of interest was reported by the authors

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3   **391   Authors' contributions**
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6   392   ND conducted the primary manuscript draft. ND, ST and OA completed subsequent manuscript
7
8   393   revisions. All authors read and approved the final manuscript.
9
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18
19   398   **Figure Legend**
20
21   399   Figure 1. The preliminary Residential Aged Care Senior Manager Quality Framework (RCSM-QF).
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23   400   *Source: Authors own figure*
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Figure 1. The preliminary Residential Aged Care Senior Manager Quality Framework (RCSM-QF). *Source: Authors own figure*

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Validation of a national leadership framework to promote and protect quality residential aged care: Protocol for a Delphi study

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Validation of a national leadership framework to promote and protect quality residential aged care: Protocol for a Delphi study

Abstract

Introduction: Australia's aging population is driving an increased demand for residential aged care services, yet concerns about the quality and safety of such care remain. The recent Royal Commission into Aged Care Quality and Safety identified various limitations relating to leadership within these services. While some competency frameworks exist globally, there is a need for sector-specific leadership competencies in the Australian residential aged care setting to promote and protect quality of care.

Methods and Analysis: This study uses the Delphi technique to establish the content validity of a national leadership framework (RCSM-QF) for promoting and protecting the quality of residential aged care in Australia. Participants will be identifiable experts through current employment within, policy development for, or research with the aged care sector. The survey will ask participants to rate the relevance, importance, and clarity of RCSM-QF items and their corresponding descriptions, and seek suggestions for revisions or additional items. Content validity will be assessed using the Content Validity Index (CVI), with items meeting specific criteria retained, revised, or removed.

Ethics and Dissemination:
Ethics approval has been sought via the James Cook University Human Research Ethics Committee (HREC) to ensure the well-being and convenience of participants while mitigating potential recruitment challenges. Data will be prepared for submission to an appropriate peer-reviewed journal and presentation at relevant academic conferences.

Keywords: residential aged care, quality, leadership, senior managers, validation

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5   73   **Strengths**
6   74   • Purposive sampling will be used as a targeted recruitment method for interviewing
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8   75   participants from peak bodies, primary health networks, and researchers, allowing for diverse
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10   76   expert perspectives within the Australian aged care sector.
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12   77   • The Delphi method is a popular tool for framework validation in research, allowing for
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14   78   structured input from Auatrliaa aged care experts to refine and validate the preliminary
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16   79   framework.
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19   80   **Limitations**
20   81   • The Delphi process is based on subjective opinions rather than empirical evidence, potentially
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22   82   affecting the validity and reliability of the framework validation process.
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24   83   • To address limitations in the Delphi process, future phases of the research may require
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26   84   qualitative methods to allow for real-time feedback and in-depth insights from a wider range
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28   85   of industry experts.
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31   86   • The anonymous nature of the Delphi process limits in-depth discussions, debates, and the
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33   87   exchange of ideas, potentially restricting the exploration of alternative perspectives regarding
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35   88   the leadership competencies influencing the quality of Australian residential aged care
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Introduction

98   Australia's population is ageing, with the proportion of people aged 65 years or over projected to

99   increase from 16% (2018) to 23% in 2066. (1) In line with national ageing trends, the demand for

100 Australian residential aged care services is also increasing, (2) and there have been ongoing concerns

101 about the quality and safety of that care. (3) Indeed, the recent Royal Commission into Aged Care

102 Quality and Safety described a "cruel and harmful" national aged care system comprising services

103 that were "neglectful" and "woefully inadequate". (4) The leadership of these services, including

104 'ground-level' residential aged care senior management teams, was described as "lacking", and

105 leadership competencies for promoting quality of care were found to be "poorly defined". (4) The

106 lack of any sector-specific professional development or leadership framework to guide the acquisition

107 of these required skills within the Australian residential aged-care setting is a concern. (5)

108

109 Existing studies have generated some knowledge regarding leadership requirements, and some

110 competency frameworks exist for aged care services globally, although evidence gaps remain.

111 Seminal work in Australian aged care leadership was conducted by Jeon et al. (2015) in validating a

112 clinical leadership framework, the Aged care *Clinical* Leadership Qualities Framework (ACLQF), for

113 middle (mainly clinical) managers in both community-based and residential aged care services. (6) in

114 2014, Aged & Community Services Australia (ACSA) developed the Australian Aged Care

115 Leadership Capability Framework. While this framework reflected an important step forward, its

116 inclusion of different leadership levels (e.g. frontline, middle- and senior managers) and multiple

117 service types (residential, acute and community-based) meant it was necessarily general in nature,

118 with limited specificity concerning the multi-faceted and increasingly demanding nature of residential

119 aged care facilities. (7) Furthermore, the ACSA framework describes leadership capabilities

120 (statements of behaviours, skills, and knowledge that affect an outcome) but not competencies (a

121 measure or index of how well a person performs that capability) and does not explicitly link these to

122 promoting quality care.

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124   With an absence of competency-based frameworks specific to the Australian residential aged care

125   setting, there is a clear need to describe and model the competencies required by leadership teams to

126   provide effective leadership within this increasingly complex environment. A recent programme of

127   work identified the knowledge, skills and abilities senior managers need to promote and protect

128   quality residential aged care. (8) Competencies were to form a preliminary leadership competency

129   framework, The Residential Aged Care Senior Manager Quality Framework (RCSM-QF). (8) The

130   RCSM-QF comprises two key elements: personal qualities and leadership skills. Leadership skills are

131   broken down into five domains, including i) culture and environment, ii) stakeholder relations, iii)

132   clinical and aged care expertise, iv) asset management, and iv) disaster and change management

133   (Figure 1.) This original and empirically grounded competency framework synthesised Australian

134   senior managers' skills and personal qualities to promote and protect the quality of care in the

135   residential aged care setting. Its formation drew on the experiences and strategic insights of senior

136   managers themselves and Australian industry experts. (8) These empirically derived leadership

137   competencies were compared with those extracted from pre-existing senior-management-relevant

138   leadership frameworks, including the HLA Competency Directory, (9) IPEC Core Competencies, (10)

139   and Master Health Service Management Competency Framework (11) to form a novel (though

140   untested) competency framework.

141

142   Although the formation of the preliminary RCSM-QF is a step in addressing the evidence gap relating

143   to sector-specific leadership competencies and professional development requirements for senior

144   managers to promote quality of care, it has not been applied or tested in the Australian residential

145   aged care setting nor the competencies empirically validated. Therefore, the accuracy and usefulness

146   of the RCSM-QF for describing and helping assess the leadership competencies required by senior

147   managers across Australia are not yet confirmed.

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149   **[INSERT FIRGURE 1. HERE]**

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152   This study aims to establish the content validity of the preliminary RCSM-QF within the Australian

153   residential aged care context using a modified Delphi process. Once this validity is established, this

154   programme of work could provide a practical tool to form a professional development infrastructure

155   for current and aspiring Australian residential aged care senior managers who continue to operate

156   within this increasingly complex environment.

157

158   **Methods and Analysis**

159   Aim: To establish the content validity of a national leadership framework to promote and protect the

160   quality of residential aged care in Australia

161

162   **Objectives:**

163   1. Rate the relevance, importance and clarity of RCSM-QF items [competencies OR personal

164   qualities] and their descriptions using a 4-point Content Validity Index (CVI) scale

165   2. Suggest RCSM-QF item and description scale revisions.

166   3. Suggest RCSM-QF domain name and domain definition revisions and

167   4. Suggest additional items [competencies or personal qualities] for the RCSM-QF

168

169   **Study Design**

170   Content validity refers to the extent to which a measurement tool, such as a test or assessment,

171   accurately represents the specific content it is intended to measure. (12) Content validity is an

172   important aspect of validating a leadership competency. (13) In the context of the current research, the

173   method will assess whether the RCSM-QF accurately and comprehensively represents the key

174   competencies required for effective leadership within the Australian residential aged care setting. We

175   will evaluate content validity using the Delphi survey technique and a Content Validity Index (CVI).

176   The Delphi technique is a widely used method for achieving consensus. (14) It uses a series of

177   questionnaires to collect information from participants in several iterations, or 'rounds'. The starting

178   point is an open questionnaire or a pre-derived list of questions, (15) Following each round, each

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179   participant receives an individualised report of their responses to the group response. (15) In

180   subsequent rounds, participants can reassess their responses in light of this information. (14) The

181   process allows for a controlled debate and for consensus to build without necessitating group

182   interaction, an advantage in the context of geographically dispersed and time-constrained experts. It

183   also limits the time and resources required to plan and facilitate group interactions and the bias from

184   dominant individuals within this consensus-building phase. (14)

185   **Study setting**

186   The current study will be completed with representatives who contribute to or advise regarding the

187   delivery of aged care services in Australia. Examples of different 'levels' of aged care include: i)

188   entry-level community-based care at home; ii) higher levels of care at home (Home Care Packages

189   Program), and when living at home is not an option; iii) residential aged care. (16) This study focuses

190   specifically on the role of senior managers in providing quality care in the Australian residential aged

191   care setting. Residential aged care provides health care services and accommodation for older people

192   who are unable to continue living independently in their own homes. (17)

193

194   In Australia, residential aged care providers can span a range of different sectors, including religious,

195   charitable, community, for-profit and government organisations. (17) Typical services may include

196   accommodation, personal care assistance, clinical care and a range of social care activities, including

197   recreational activities and emotional support. Approximately 250,000 older Australians received

198   permanent residential aged care at some time during the financial year 2021/2022. (1)

199

200   **Participant recruitment**

201   To be eligible for participation, panel participants will need to be self- or other-identified aged care

202   experts through current employment within the aged care sector and have high-level knowledge and

203   experience in aged care. Expertise may include clinical practice, management, service delivery,

204   policy, research and education or combinations of the above. From previous work, this study will

205   target five major groupings of expert representatives, including peak advocacy bodies, primary health

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206 network representatives, members of state and federal government, aged care researchers and

207 residential aged care executives and governing board members spanning multiple organisation types

208 (non-for-profit, for-profit, non-governmental [NGO], and government-operated). (8) Purposive

209 sampling will be used to ensure that rural, remote, and metropolitan settings across Australia are

210 represented on the panel. Purposive sampling will also allow the identification and selection of

211 information-rich participants from the expert groupings with knowledge and experience working

212 within the Australian aged care sector. (18) Participant selection will be purposive, and aged care

213 industry experts will be recognised as possessing specific knowledge of the health service needs of

214 older persons in Australia and capable of reflecting critically on the link between senior manager

215 leadership skills and quality residential aged care.

216

217 A list of eligible participants will be generated using a combination of investigators' aged care

218 industry experience and a comprehensive desk search. Participants will be emailed an invitation for

219 involvement in *Round 1* and followed up by phone if a response has not been received in two weeks.

220 Participants will provide electronic consent before commencing the questionnaire.

221

222 **Data collection**

223 *Round 1:* In reviewing, modifying and validating the RCSM-QF, two rounds of iterative consultation

224 will be undertaken with the Delphi panel via email. In round one, experts will be sent email

225 invitations to participate. Upon clicking the survey link, participants will be redirected to an online

226 platform where they will be asked to confirm their consent to participate and will rate each item and

227 its response scale based on clarity, relevance, and importance using a 4-point CVI scale where 1 = not

228 clear/relevant/important, 2 = somewhat clear/relevant/important, 3 = quite clear/relevant/important,

229 and 4 = highly clear/relevant/important. (19) Through open dialogue boxes, experts will also provide

230 suggestions for item wording, domain name, and domain definition revisions and propose additional

231 items for any missing experiential aspects of care. Demographic questions will include gender, year of

232 birth, highest educational qualification, place of work and current professional role. Experts will be

8

233   given a 2-week window to complete the Round 1 survey, after which the survey will be closed, and

234   the results will be exported into Microsoft Excel. Reminder emails will be dispatched to participants

235   on days 5 and 12 of the Round 1 questionnaire if they have not taken part.

236

237   *Round 2:* The second round will commence 1 week after the conclusion of Round 1. Experts will

238   receive a second survey invitation via email, asking them to rate the revised items in terms of clarity,

239   relevance, and importance using the 4-point CVI scale and propose item revisions. A 2-week

240   timeframe will be allotted for experts to complete the Round 2 survey, following which the survey

241   will be closed, and the results will be exported into Microsoft Excel. Reminder emails will be sent to

242   participants on days 5 and 12 of the Round 2 survey if they have not participated.

243

244   **Data Analysis**

245   *Content validity*

246   The current study will incorporate the content validity index (CVI) as a verified approach for

247   evaluating content validity. (20) The CVI index comprises two computed components: the Item-CVI

248   (I-CVI) and the Scale-level-CVI (S-CVI). (20) To compute the I-CVI, the number of Delphi panel

249   experts assigning a "very relevant" rating to each item is divided by the total number of experts,

250   resulting in values ranging from 0 to 1. An I-CVI surpassing 0.79 deems the item relevant, while

251   values falling between 0.70 and 0.79 indicate the need for item revisions; I-CVI values below 0.70

252   warrant item elimination. (20) Likewise, the S-CVI is determined based on the count of items within a

253   tool that attain a "very relevant" rating. (20) To measure the S-CVI, the Universal Agreement (UA)

254   among experts (S-CVI/UA) will be used. The S-CVI/UA involves summing all items with an I-CVI

255   of 1 and dividing by the total number of items, with the ab S-CVI/UA of $\geq$ 0.8 denoting excellent

256   content validity. (21)

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258   *Round 1:* The demographic and Delphi survey data will be analysed descriptively using Microsoft

259   Excel. Expert responses to the item-level CVI (I-CVI) scales will be binary coded as 0 for "not or

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260 somewhat relevant/important/clear" and 1 for "quite or highly relevant/important/clear." An I-CVI

261 score will then be computed for each item, representing the proportion of experts scoring 1 out of the

262 total number of experts in the Round 1 sample. (19) Items meeting a score of ≥0.80 for each of

263 relevance, importance, and clarity (without revision suggestions) will be retained for the final version

264 of the RCSM – QF. Items achieving scores of ≥0.80 for each of relevance, importance, and clarity

265 (with revision suggestions), or ≥0.80 for relevance and importance but <0.80 for clarity, will undergo

266 revision by the research team based on expert feedback and will subsequently be included in the

267 Round 2 survey. Items obtaining scores of <0.80 for each of relevance, importance, and clarity will be

268 removed from the RCSM-QF. The research team will also consider suggestions provided by experts

269 concerning modifications to domain names, domain definitions, and missing items.

270

271 *Round 2:* The Round 2 questionnaire results analysis will adhere to the same methodology as in

272 Round 1. The research team will thoroughly review additional suggestions for item revisions before

273 implementing further RCSM-QF modifications. A scale-level CVI (S-CVI) score will also be

274 calculated by averaging the I-CVI scores for all items included in the final RCSM-QF. (20) Delphi

275 studies are typically carried out in two to three rounds with a deliberately selected panel of experts.

276 (14) In the current study, a third round of consultation will be administered if few items achieve

277 scores of ≥0.80 for relevance, importance, and clarity. In this third round, data collection and analysis

278 processes will replicate those of the previous rounds.

279

280 **Ethics and Dissemination**

281 The James Cook University Human Research Ethics Committee (HREC) approved this study's ethics

282 on 14 November 2023. The current project has been deemed 'negligible risk' by the HREC, as there is

283 no foreseeable risk of harm or discomfort to the participants other than the inconvenience of

284 completing the questionnaire. A potential risk of this study is difficulties in recruiting the required

285 numbers for this research, which might pose a risk to study completion. If this is the case, alternative

286   recruitment methods will be considered, including broadening networks to include other professional

287   roles and organisations operating within the Australian aged care sector.

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289   Data will be prepared for submission to an appropriate peer-reviewed journal and presentation at

290   relevant academic conferences, including the Australian Association of Gerontology Conference

291   [2024]. In addition to the International Journal of Healthcare Management, where a large body of

292   literature regarding aged care management and quality of care is published, several additional avenues

293   have been identified to add variety to the audience accessing the project's findings. Given that this

294   research focuses on senior managers in the aged care setting, targeted journals include the

295   Australasian Journal on Ageing, Journal of Ageing and Health and BMC Health Services Research or

296   BMJ Open.

297

Patient and Public Involvement

299   This research project was designed without direct patient or public involvement in several key

300   aspects, including determining research priorities, defining research questions, selecting outcome

301   measures and contributing to study design. It is recognised that including patient and public

302   perspectives can significantly enhance the relevance, quality, and applicability of research outcomes,

303   and their absence in this study might have implications for the comprehensiveness and relevance of

304   our findings.

305

Discussion

307   Senior managers are central in promoting and protecting quality of care in clinically and

308   administratively complex residential aged care services settings. (8) Yet globally and in Australia,

309   there remain significant gaps in knowledge regarding the specific competencies and skills required of

310   this leadership cohort. (8) This study aims to establish the validity of a novel leadership competency

311   framework, which could provide a practical tool for national regulatory and professional bodies by

312   defining and describing the specific skills, behaviours, knowledge, and experience needed by aspiring

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313 and current senior managers. It may also inform the development of quality indicators to inform

314 competency-based performance evaluations of senior managers within their current roles.

315

316 Evidence-based leadership competency frameworks provide a standardised and consistent approach to

317 leadership development across multiple health settings. (22) Once validated for acceptability and

318 applicability, the RCSM-QF competencies may assist residential aged-care organisations in

319 establishing a consistent promotion criterion that incorporates demonstrated excellence by senior

320 managers who consistently lead high-quality healthcare operations within their respective

321 organisations. In doing so it could provide a valuable tool for self-reflection to identify knowledge

322 and skill gaps and guide future training and other career progression opportunities.

323

324 The RCSM-QF also offers a set of skills and personal qualities that could inform the development of

325 future courses or qualifications to develop the competencies required by aspiring managers to promote

326 quality of care within their respective organisations and across the broader aged care sector. This

327 focus on quality and continuous improvement may drive organisational excellence for the quality of

328 care, enhance resident health outcomes, and foster a culture of accountability and innovation within

329 Australian residential aged care organisations. (23) This work thus not only addresses key gaps in the

330 literature and evidence base regarding senior management competencies but represents an essential

331 and timely first step in responding to Royal Commission recommendations to strengthen leadership in

332 the sector.

333

334 As with a majority of studies, the design of the current study is subject to limitations. Firstly,

335 purposive sampling was used to recruit interview participants from three categories of experts (peak

336 bodies, PHNs, and researchers); however, it is possible that not all participants will participate due to

337 scheduling or other issues. It is expected, therefore, that the final sample of experts may introduce an

338 element of bias and not always represent the diverse range of perspectives across multiple

339 professional roles within the Australian aged care sector. For example, suppose a majority of study

340 participants were provider advocates whose primary focus is to support the viability and sustainability

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341 of aged care service providers. In that case, experts are potentially less likely to consider the resident

342 experience and personalised healthcare needs. Conversely, consumer advocates play an important role

343 in advocating for the older person and speaking on behalf of that individuals in a way that best

344 represents their interests. With an intense focus on the individualised healthcare needs of older

345 Australians, consumer advocates may have less understanding of the structural elements that

346 adversely influence RAC quality and the leadership competencies required.

347

348 While the modified Delphi process is a popular design used for research involving framework

349 validation, some potential limitations within the proposed research are evident. (24) Firstly, the

350 Delphi process is largely based on expert opinions rather than empirical evidence, and while these

351 opinions can be valuable, they may not always align with objective facts or data. (25) This can limit

352 the validity and reliability of the framework validation process, particularly if more empirical

353 evidence is needed to support the experts' judgments. A further potential limitation of the study design

354 is that experts provide their input individually and anonymously. (26) The Delphi process, therefore,

355 lacks direct interaction among experts, which can restrict the opportunity for in-depth discussions,

356 debates, and exchanging ideas. (26) Consequently, the method may not capture the full complexity of

357 the research problem or allow for exploring alternative perspectives. (25) Depending on the findings

358 from this study, future phases of this programme of work may involve qualitative methods to address

359 this limitation. These sessions would involve Australian aged care industry experts with varying

360 opinions and perceptions to allow real-time feedback, in-depth insights and rich qualitative data

361 regarding the applicability of the RCSM-QF implementation within the Australian residential aged

362 care setting. (27)

363

364 **List of abbreviations**

365 *ACLQF* – Aged Care Clinical Leadership Quality Framework

366 *ACSA* – Aged and Community Services Australia

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367   *RCSM – QF* – Residential Aged Care Senior Management Quality Framework

368   *HLA* – Healthcare Leadership Alliance

369   *IPEC* – Interprofessional Education Collaborative

370   *CVI* - Content Validity Index

371   *S - CVI* – Scale level content Validity Index

372   *I – CVI* – Item Content Validity Index

373

374   **Declarations**

375   **Ethics approval**

376   Ethics approval was received from the James Cook University Human Research Ethics Committee on

377   23 November 2023 [**H9265**]. All methods will be carried out in accordance with relevant guidelines

378   and regulations.

379   **Consent for publication.**

380   No participants were recruited or involved in the research process, so no individual consent for

381   publication was required. Informed consent will be obtained from all subjects and/or their legal

382   guardian (s) upon commencement of data collection activities.

383   **Availability of data and materials**

384   Previous datasets used and analysed to form the study protocol are available from the corresponding

385   author upon reasonable request.

386   **Competing Interests Statement**

387   No potential conflict of interest was reported by the authors

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3   389   **Authors' contributions**
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6   390   ND conducted the primary manuscript draft. ND, ST and OA completed subsequent manuscript
7
8   391   revisions. All authors read and approved the final manuscript.
9
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13
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15
16
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19   396   **Figure Legend**
20   397   Figure 1. The preliminary Residential Aged Care Senior Manager Quality Framework (RCSM-QF).
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23   398   *Source: Authors own figure*
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Figure 1. The preliminary Residential Aged Care Senior Manager Quality Framework (RCSM-QF). *Source: Authors own figure*

ACCORD
Accurate Consensus Reporting Document

Item No.	Section	Checklist Item (*help text*)	Page No.
T1	**Title**	Identify the article as reporting a consensus exercise and state the consensus methods used in the title. *For example, Delphi or nominal group technique.*	1
I1	**Introduction**	Explain why a consensus exercise was chosen over other approaches.	3,5,
I2		State the aim of the consensus exercise, including its intended audience and geographical scope (national, regional, global).	6,7
I3		If the consensus exercise is an update of an existing document, state why an update is needed and provide the citation for the original document.	n/a
M1	**Methods** Registration	If the study or study protocol was prospectively registered, state the registration platform and provide a link. If the exercise was not registered, this should be stated. *Recommended to include the date of registration.*	n/a
M2	Selection of SC and/or panellists	Describe the role(s) and areas of expertise or experience of those directing the consensus exercise. *For example, whether the project was led by a chair, co-chairs or a steering committee, and, if so, how they were chosen. List their names if appropriate, and whether there were any subgroups for individual steps in the process.*	15
M3		Explain the criteria for panellist inclusion and the rationale for panellist numbers. State who was responsible for panellist selection.	8,9
M4		Describe the recruitment process (how panellists were invited to participate). *Include communication/advertisement method(s) and locations, numbers of invitations sent, and whether there was centralised oversight of invitations or if panellists were asked/allowed to suggest other members of the panel.*	9,10
M5		Describe the role of any members of the public, patients or carers in the different steps of the study.	n/a
M6	Preparatory research	Describe how information was obtained prior to generating items or other materials used during the consensus exercise. *This might include a literature review, interviews, surveys, or another process.*	4,5
M7		Describe any systematic literature search in detail, including the search strategy and dates of search or the citation if published already. *Provide the details suggested by the reporting guideline PRISMA and the related PRISMA-Search extension.*	n/a
M8		Describe how any existing scientific evidence was summarised and if this evidence was provided to the panellists.	4,5
M9	Assessing consensus	Describe the methods used and steps taken to gather panellist input and reach consensus (for example, Delphi, RAND-UCLA, nominal group technique). *If modifications were made to the method in its original form, provide a detailed explanation of how the method was adjusted and why this was necessary for the purpose of your consensus-based study.*	7,8
M10		Describe how each question or statement was presented and the response options. State whether panellists were able to or required to explain their responses, and whether they could propose new items. *Where possible, present the questionnaire or list of statements as supplementary material.*	n/a
M11		State the objective of each consensus step. *A step could be a consensus meeting, a discussion or interview session, or a Delphi round.*	n/a
M12		State the definition of consensus (for example, number, percentage, or categorical rating, such as 'agree' or 'strongly agree') and explain the rationale for that definition.	n/a
M13		State whether items that met the prespecified definition of consensus were included in any subsequent voting rounds.	n/a
M14		For each step, describe how responses were collected, and whether responses were collected in a group setting or individually.	n/a

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![ACCORD - Accurate Consensus Reporting Document]

M15		Describe how responses were processed and/or synthesised. *Include qualitative analyses of free-text responses (for example, thematic, content or cluster analysis and/or quantitative analytical methods, if used.*	n/a
M16		Describe any piloting of the study materials and/or survey instruments. *Include how many individuals piloted the study materials, the rationale for the selection of those individuals, any changes made as a result and whether their responses were used in the calculation of the final consensus. If no pilot was conducted, this should be stated.*	.n/a
M17		If applicable, describe how feedback was provided to panellists at the end of each consensus step or meeting. *State whether feedback was quantitative (for example, approval rates per topic/item) and/or qualitative (for example, comments, or lists of approved items), and whether it was anonymised.*	n/a
M18		State whether anonymity was planned in the study design. Explain where and to whom it was applied and what methods were used to guarantee anonymity.	n/a
M19		State if the steering committee was involved in the decisions made by the consensus panel. *For example, whether the steering committee or those managing consensus also had voting rights.*	n/a
M20	Participation	Describe any incentives used to encourage responses or participation in the consensus process. *For example, were invitations to participate reiterated, or were participants reimbursed for their time.*	n/a
M21		Describe any adaptations to make the surveys/meetings more accessible. *For example, the languages in which the surveys/meetings were conducted and whether translations or plain language summaries were available.*	n/a
R1	Results	State when the consensus exercise was conducted. List the date of initiation and the time taken to complete each consensus step, analysis, and any extensions or delays in the analysis.	n/a
R2		Explain any deviations from the study protocol, and why these were necessary. *For example, addition of panel members during the exercise, number of consensus steps, stopping criteria; report the step(s) in which this occurred.*	n/a
R3		For each step, report quantitative (number of panellists, response rate) and qualitative (relevant socio-demographics) data to describe the participating panellists.	n/a
R4		Report the final outcome of the consensus process as qualitative (for example, aggregated themes from comments) and/or quantitative (for example, summary statistics, score means, medians and/or ranges) data.	n/a
R5		List any items or topics that were modified or removed during the consensus process. Include why and when in the process they were modified or removed.	n/a
D1	Discussion	Discuss the methodological strengths and limitations of the consensus exercise. *Include factors that may have impacted the decisions (for example, response rates, representativeness of the panel, potential for feedback during consensus to bias responses, potential impact of any non-anonymised interactions).*	n/a
D2		Discuss whether the recommendations are consistent with any pre-existing literature and, if not, propose reasons why this process may have arrived at alternative conclusions.	n/a
O1	Other information	List any endorsing organisations involved and their role.	n/a
O2		State any potential conflicts of interests, including among those directing the consensus study and panellists. Describe how conflicts of interest were managed.	15
O3		State any funding received and the role of the funder. *Specify, for example, any funder involvement in the study concept/design, participation in the steering committee, conducting the consensus process, funding of any medical writing support. This could be disclosed in the methods or in the relevant transparency section of the manuscript. Where a funder did not play a role in the process or influence the decisions reached, this should be specified.*	n/a

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