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7 **Caregiving Preparedness and Caregiver Burden in Omani Family Caregivers for**
8 **Patients with Acquired Brain Injury**

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16

17 **Abstract**

18 **Objective:** To explore the caregiving preparedness and burden among Omani family caregivers
19 (FCs) of patients with acquired brain injury (ABI). **Methods:** A prospective observational design
20 was used to collect data from 119 FCs and their patients at the time of discharge from the hospital
21 and 16 weeks post-discharge during follow up-care in the neurology clinic. The questionnaire
22 comprised the Zarit Burden Index, the Preparedness for Caregiving Scale, the SF-12 General Health
23 Survey, and a patient symptom scale. **Results:** FCs were predominantly female (55.5%), and their
24 mean age was 38.27 ± 9.11 years. Most patients had moderate to severe ABI (95.8%) due to stroke
25 (56.3%) and trauma (30.3%). The most common patient symptoms were loss of muscle strength,
26 speech problems, mood problems, memory loss, and change in behavior. Most FCs had a low
27 caregiving preparedness (58%) at discharge, and 19.1% had a high level of caregiving burden at 16
28 weeks post-discharge. The length of time post-injury ($p < 0.01$), symptom severity ($p < 0.01$), and
29 the FCs' physical and mental health status ($p < 0.01$) were significant predictors of caregiving
30 preparedness. The predictors of caregiver burden were caregiver preparedness ($p < 0.01$), symptom

31 severity ($p < 0.01$), and caregivers' mental health ($p = 0.028$). **Conclusion:** Omani FCs of patients
 32 with ABI commence the caregiver role with inadequate preparation, and shortly a significant number
 33 suffer a high caregiving burden. Interventions focusing on the caregiver's health and training in
 34 symptom management may enhance the outcomes of FCs and patients.

35 **Keywords:** Acquired brain injury; Caregiving; Caregiving preparedness; Caregiver burden; Family
 36 caregivers; Rehabilitation; Traumatic brain injury; Oman.

38 **Advances in Knowledge**

- 39 • This is the first study to explore caregiving preparedness and caregiver burden in FCs
 40 of ABI patients in Oman.
- 41 • The findings show that patients with ABI are discharged from the acute care setting to
 42 home when they are still physically dependent and with a high symptom burden.
- 43 • The FCs assume the caregiver role in a state of low caregiving preparedness.
- 44 • In a period of 16 weeks post-discharge, up to 19 % of the FCs report a high level of
 45 caregiver burden, despite initiating care in a state of good physical and mental health.

47 **Application to Patient Care**

- 48 • The findings indicate a gap in neurorehabilitation care for ABI patients in Oman and
 49 the need for caregiver support programs to augment their efficacy and caregiving
 50 preparedness before resuming the caregiver role.
- 51 • Discharge planning for patients with ABI needs to be augmented with programs to
 52 educate, train, and support the FCs to gain confidence in managing the patient's symptoms,
 53 general care, and personal health while at home.
- 54 • The uptake of caregiver burden in a short period of time post-discharge has
 55 significant implications for the caregiver and ABI patient outcomes, and system-wide
 56 interventions such as home health services may help to address the gaps.

58 **Introduction**

59 Acquired Brain Injury (ABI) is recognized as a major contributor to the global burden of disability,
 60 death, and lifelong sequelae.¹ ABI includes any injury to the brain that is not congenital,
 61 degenerative, hereditary, or caused by the birth process but resulting from traumatic and non-

62 traumatic causes. The non-traumatic causes include stroke, infection, and tumors, while traumatic
63 brain injury occurs due to an external force such as falls, traffic accidents, or violence injuring the
64 brain with or without penetration of the skull.² ABI leads to physical, physiological, cognitive,
65 behavioral, social, and economic difficulties with ramifications for the patient and their families.¹
66 Many individuals affected by ABI experience functional limitations necessitating long-term care and
67 support.³ In countries with less established healthcare systems, rehabilitation care is limited, and the
68 support and care needed by patients with ABI are mainly provided at home by family members.⁴

69
70 The World Health Organization estimates that 60% of the ABI burden is due to road traffic accidents
71 (RTA)⁵ and predicts that by 2030, RTA will be the 7th leading cause of death worldwide.⁶ Oman, a
72 country where the current study was conducted, has a high rate of RTA.⁷ Oman is rated 4th among
73 the Arabian Gulf Co-operation nations and 57th worldwide for RTA injuries and deaths.⁵⁻⁷ Stroke is
74 another major cause of ABI in Oman and is associated with a 25.4% and 30% cumulative mortality
75 rate at 12 months and 24 months, respectively.⁸ The key factors fueling the high rates of ABI in
76 Oman include the high incidence of hypertension, diabetes mellitus, dyslipidemia, obesity, sedentary
77 lifestyles, and the aging population.⁸ Approximately 41.4% of Omani stroke patients remain
78 physically dependent after the acute phase, and 59% remain with a Modified Rankin Scale for
79 Neurologic Disability of greater than two (2) after discharge from the hospital.⁸

80
81 Due to the lack of robust neuro-rehabilitation and home care services in Oman, patients affected by
82 ABI and related sequelae are directly discharged home (after acute hospital care), and the family
83 members assume the caregiving role. The family member who takes on the primary responsibility of
84 providing physical, emotional, and financial support to the ABI patient while at home is referred to
85 as the family caregiver (FC).⁹ In Oman, there are currently no support systems for the FC. The FC
86 assumes the caregiver role without any formal assistance from the healthcare system. In other
87 studies, the lack of support is reported to be associated with low preparedness and high caregiver
88 burden among family caregivers (FCs) of patients with ABI.¹⁰ On the other hand, education
89 programs for FCs have been found to improve caregiver preparedness and well-being.¹¹

90
91 The caregiver role requires tolerance and commitment to meet the ABI patient's needs related to
92 personal hygiene, dressing, nutrition, communication, emotional support, mobility, and safety,

93 especially in those with minimal physical capabilities.¹² Therefore, the FCs play a vital role in the
94 recovery, rehabilitation, and community re-integration of a patient with ABI.¹³ Thus, the lack of
95 support for FCs can negatively impact the ABI patient. Additionally, the demands of caregiving
96 increase the tendency of self-neglect among FCs, which worsens as the ABI patients' home care
97 needs become prolonged and arduous.¹⁴ Subsequently, the FCs may become some kind of hidden
98 patients themselves.¹⁵

99
100 Studies from other countries show that the caregiving burden from ABI patients is relatively higher
101 compared to patients with other conditions.¹⁰ Caregiving burden is a multidimensional phenomenon,
102 with physical, psychological, financial, and social isolation aspects.¹ The FCs also have a burden of
103 inadequate information about future patient outcomes.¹⁶ One of the moderators of caregiver burden
104 is the level of preparedness for the caregiver role. Caregiving preparedness is the caregiver's
105 perceived ability to meet the care needs of the patient and the ability to arrange for the patient and
106 handle emergent situations.¹⁷ The FC may feel unprepared for the role due to personal factors and
107 lack of skills.¹⁸ The fact that most ABI occurs unexpectedly allows no time for most FCs to learn
108 new skills or adjust to the new roles.¹⁰

109
110 Caregivers with high caregiving preparedness tend to experience low caregiver burden, marginal
111 strain, and mood disturbances and have better self-care.¹⁷ A high caregiving preparedness is
112 associated with low hospital readmissions and accelerated ABI patient recovery.¹⁷ Despite the
113 contribution of FCs towards the rehabilitation and recovery of ABI patients, no studies have focused
114 on their preparedness, caregiver burden, or health outcomes in Oman. The current study explored the
115 caregiver burden and preparedness of FCs of patients with ABI in Oman. The study results will be
116 used to plan a home-based nurse-led program to support ABI patients and their FCs.

117 118 **Methods**

119 A prospective observational design was used to follow FCs of patients with ABI for a period of 16
120 weeks post-discharge (April 2019- December 2021) from the acute care hospital. The FCs and
121 patients were recruited at the time of discharge from the neuro-critical care unit (30 beds) and
122 neurology ward at Khoula Hospital in Oman. The patients were individuals of age ≥ 18 years and

123 admitted with a confirmed diagnosis of any type of ABI. In order to be included in the study, the
124 ABI patient had to be able to state their names, positively identify family members, and a
125
126 Modified Rankin Scale for Neurologic Disability of at least +1. The FC was the family member
127 (relative) responsible for providing day-to-day care at home for the ABI patient after discharge from
128 the hospital. The FCs were included if they were identified by the patient as the main person who
129 will be responsible for the care of the patient once discharged from the hospital; Omani by
130 nationality; age ≥ 18 years; able to speak and understand Arabic or English; live in the same
131 household as the ABI patient; and able to provide written consent.

132
133 A purposive sampling approach was used to identify ABI patients and their FCs. A total of 119
134 patients with ABI and their FCs were recruited in the study at the time of discharge from the
135 hospital. An interview questionnaire was used to collect data from the FCs. The questionnaire was
136 comprised of the SF-12 Healthy Survey (SF-12), the Preparedness for caregiving scale (PCS), the
137 abridged Arabic version of the Zarit Burden Inventory (AZBI), and the ABI symptom severity scale.
138 The FCs' general health was measured using the SF-12. The physical and mental health scores range
139 from 0 to 100, where zero indicates the lowest level of health and 100 indicates the highest level of
140 health. The internal consistency and test-retest reliabilities of the SF-12 range from 0.67 to 0.82.¹⁹

141
142 The FCs' preparedness for caregiving was measured with the PCS.²⁰ The PCS (8 items) assesses
143 how well the FC is prepared for the demands of caregiving.²⁰ The responses are rated on a 5-point
144 Likert scale ranging from 0 (not at all prepared) to 4 (very well prepared). Item scores are summed
145 to generate a total score (ranging from 0 to 32), and high scores indicate a high level of
146 preparedness. The PCS Cronbach's alpha in the current study was 0.98, and this is consistent with
147 the range of 0.88 to 0.95 reported in other studies.²⁰ The caregiving burden incurred while caring for
148 the patient with ABI was measured using the AZBI. The AZBI has 12 items with a five-point
149 response Likert scale (total scores range from 0 to 48).²¹ High scores indicate a high caregiving
150 burden. In this study, the AZBI Cronbach's alpha was 0.90, whereas other studies reported alpha's
151 ranging from 0.74 to 0.81.²¹

152

153 The ABI patient symptom severity score was used to assess the presence and severity of symptoms
154 commonly associated with ABI. The symptoms assessed are summarized in Table 2. The severity of
155 the symptom was rated on a scale developed by the investigators, ranging from 1 to 5 (1= no
156 difficulty, 3 = mild difficulty, 4 = moderate difficulty, and 5 = severe difficulty). A total score was
157 computed by generating the sum of all items (symptom burden). The Cronbach's alpha of the
158 symptom severity scale was 0.88.

159
160 The study was approved by the Research Committee of the hospital, the Ministry of Health in Oman,
161 and the investigators' institutions. The participants received explanations of the study procedures
162 and signed the consent form before data collection. The investigators approached the charge nurses
163 of units that admit patients with ABI to identify those scheduled for discharge. The nurses notified
164 the study research assistant (a nurse) of the discharge time and when a family member could take the
165 patient home. The research assistant screened the family member for eligibility before collecting
166 data about the patient and caregiver characteristics, FC preparedness for caregiving, and health status
167 at discharge.

168
169 The FCs were also informed that additional data about the caregiving burden would be collected
170 during the patient's neurology clinic follow-up appointment at 16 weeks. The patients with ABI
171 return to the neurology clinic for follow-up care at least every two months. The caregiving burden
172 data were collected during the 2nd follow-up appointment (at 16 weeks) because this span of time
173 ensured adequate experience and familiarity with the caregiving role and demands. Of the 119
174 participants recruited in the study, 105 (FCs and ABI patients) showed up for the 2nd appointment at
175 16 weeks (see Figure 1). The remaining 14 FCs did not show up because the patient died before the
176 2nd follow-up appointment.

177
178 Data were analyzed using Statistical Package for the Social Sciences (SPSS), version 23 (IBM
179 Corp., Armonk, New York, USA). Descriptive statistics were used to summarize sample
180 characteristics, patient symptoms, FCs' health status, caregiving preparedness, and caregiver burden.
181 Pearson's correlations were used to determine the factors associated with caregiving preparedness
182 and caregiver burden. Multiple linear regression analyses (stepwise method) were conducted to

183 establish the predictors of caregiving preparedness and burden. Multicollinearity was tested using
 184 the variance inflation factor and tolerance. A p -value of less than 0.05 was statistically significant.

185

186 **Results**

187 The mean age of FC was 38.27 ± 9.114 years, and the majority were female (55.5%), the parent
 188 (36.1%) or child (38.7%) of the patient and had no help at home with the caregiving responsibilities
 189 (95.8%) (see Table 1). Most patients were male (57.1%), with a diagnosis of stroke (56.3%), and had
 190 a Glasgow coma scale (GCS) score equivalent to moderate or severe injury at the time of admission
 191 (95.8%) and mild injury at the time of discharge (86.6%). The mean GCS scores at the time of
 192 admission and discharge were 8.43 ± 2.381 (severe injury status) and 14.25 (mild injury status),
 193 respectively.

194

195 At the time of discharge from the hospital, all the ABI patients had at least seven symptoms (see
 196 Table 2). The most common and severe symptoms were inability to live independently (4.92 ± 0.44),
 197 loss of muscle strength, paralysis, limited physical mobility or poor coordination (4.68 ± 0.68),
 198 change in speech or difficulty in being understood (4.45 ± 1.10), mood problems (4.27 ± 1.09), loss
 199 of memory and concentration (4.25 ± 1.24), and behavior problems (4.08 ± 1.14). The mean
 200 symptom score of the patients was 38.14 ± 7.42 out of 45 possible points. Most patients (94.1%) had
 201 a very high symptom burden (total score ≥ 24) at the time of discharge.

202

203 Overall the FCs reported good physical ($M = 79.24 \pm 24.08$) and mental health ($M = 63.31 \pm 15.0$),
 204 low caregiving preparedness ($M = 17.52 \pm 9.29$), and low caregiver burden ($M = 16.98 \pm 8.76$) (see
 205 Table 3). At the time of discharge, the majority of FCs were in good physical (83.2%) and mental
 206 health (90.8%) but had low caregiving preparedness (58%). After 16 weeks of caregiving, 19.1% of
 207 the FCs had a high caregiver burden. The factors associated with caregiving preparedness and
 208 caregiver burden are presented in Table 4.

209

210 The results from multiple regression analysis to determine predictors of caregiving preparedness and
 211 burden are summarized in Table 5. The final model explained a statistically significant amount of
 212 variance in caregiving preparedness, $F(4, 113) = 29.81$, $p < 0.01$, $R^2 = 0.513$, $R^2_{\text{adjusted}} = 0.496$. The
 213 length of time since the injury occurred ($p < 0.01$), symptom severity score ($p < 0.01$), FCs' physical

214 health ($p < 0.01$), and FCs' mental health ($p < 0.01$) at the time of discharge were significant
215 predictors of caregiving preparedness. The four factors explain 49.6% of the variance in caregiving
216 preparedness.

217

218 The level of caregiving preparedness ($p < 0.01$), symptom severity score ($p < 0.01$), and the FCs'
219 mental health status ($p = 0.028$) at the time of discharge were significant predictors of caregiver
220 burden. The final model explained a statistically significant amount of variance in caregiving
221 burden, $F(3, 100) = 20.57$, $p < 0.01$, $R^2 = 0.382$, $R^2_{\text{adjusted}} = 0.363$. The three factors explained 36.3%
222 of the variance in caregiver burden. A 0.4-point increase in preparedness was associated with a one-
223 point decrease in the caregiving burden. A 0.1-point increase in the FCs' mental health status was
224 associated with a 1-point decrease in the caregiver burden. And a 0.3-point increase in the patient's
225 overall symptom severity was associated with a 1-point increase in caregiver burden.

226

227 **Discussion**

228 To our knowledge, this is the first study to explore caregiving preparedness and caregiver burden in
229 Omani FCs of patients with ABI. The findings show that many ABI patients are discharged home
230 when they are still physically dependent and with a high symptom burden. And the FCs assume the
231 caregiver role in a state of low caregiving preparedness. It is therefore not surprising that in a period
232 of 16 weeks post-discharge, up to 19.1% of the FCs report high levels of caregiver burden, despite
233 initiating care in a state of good physical and mental health. The above findings indicate a gap in
234 neurorehabilitation care for ABI patients in Oman and the need for FC support programs to augment
235 their efficacy and preparedness before resuming the caregiver role.

236

237 The uptake in caregiver burden in a short period of time post-discharge has significant implications
238 for the ABI patient's outcomes, such as symptom management, recovery, hospital re-admission,
239 survival, and the FCs' health and well-being. These should be investigated in future studies.

240 Considering the absence of structured rehabilitation programs, there is a need for structured pre-
241 discharge interventions to educate, support, and prepare the FCs for the caregiver role. Other studies
242 show that structured caregiver education and training programs increase preparedness, decreased
243 caregiver burden, and lead to better outcomes for the ABI patient.²² Strategies like peer mentoring

244 and peer support groups can also improve FCs' preparedness, mental health, and ability to handle
245 caregiving stress.³

246

247 In other countries, patients with ABI and their families have identified specific needs during the
248 transition from acute care to home.²³ These include patient and family education, discharge
249 preparation, information about the patient's recovery roadmap, linking pre-discharge care with post-
250 discharge resources, and others.²³ The provision of the above supportive measures empowers the
251 FCs to approach care for ABI patients in a better way and with a high degree of resilience.

252

253 The majority of ABI patients in our study had at least seven symptoms at the time of discharge, and
254 this is similar to the findings of other studies.^{24,25} In other studies, the ABI patients had reduced
255 symptoms after six months.^{24,25} In our study, symptom severity was assessed at the time of discharge
256 from acute care. This highlights the need for longitudinal studies to evaluate the trajectory of ABI
257 patient symptoms over time and the impact of the symptom burden on Omani FCs. A few studies
258 recommend that reassuring the patients that the symptoms are manageable with proper treatment and
259 regular exercise during the period of rehabilitation is a good approach.^{24,25} Unfortunately, in Oman,
260 access to post-hospital rehabilitation is intermittent or not accessible.

261

262 The predictors of caregiving preparedness were the length of time since the occurrence of the injury,
263 symptom severity score, and FCs' physical and mental health status. The four factors highlight the
264 importance of preparing FCs in symptom management and personal health promotion and coping.
265 This can be achieved during the time when the ABI patient is in acute care and residential
266 rehabilitation. The predictors inform us that interventions that help the FCs to gain confidence in
267 managing the ABI patient's symptoms, FCs' personal health promotion, home health care services,
268 and additional time in rehabilitation may enhance the caregiver's preparedness.

269

270 Up to 19.1% of the FCs reported severe caregiver burden at 16 weeks post-discharge, and the
271 predictors of caregiver burden were the level of caregiving preparedness, symptom severity score,
272 and the FCs' mental health status at the time of discharge. This rate of burden is closely similar to
273 that reported by other studies.^{23,26} A study of FCs of stroke survivors conducted in Texas reported
274 that 17% had moderate to severe caregiver burden, and the burden was associated with moderate to

275 severe functional disability.²⁷ Other studies show that a high level of caregiving burden is associated
276 with ABI patients' brain injury severity, low ability to perform activities of daily living,^{11,28} presence
277 of tracheostomy tube, and speech or swallowing disorders.^{1,3,12}

278

279 Our study, like others, supports the observation that it takes time for the FCs to attain adequate
280 preparedness or readiness to care for the ABI patient at home.^{10,29,30} Therefore, supportive
281 interventions and deliberate training for FCs are needed in order to shorten the time and reduce the
282 challenges faced in the process of achieving preparedness. The FCs experience better health status
283 when they receive support, teaching, home health care services, and orientation to caring for ABI
284 patients at home.^{1,13,14} The current study was observational that could not implement the above
285 interventions. Therefore, we recommend interventional studies tailored to Oman culture to address
286 the unmet needs of FCs while caring for ABI patients at home.

287

288 The study had limitations that need to be considered when interpreting its results, and these include a
289 small sample, limited follow-up period (16 weeks), limited data about patient symptoms, and
290 participant recruitment from a single site. Additionally, the sample was comprised of ABI patients
291 who had a high severity of deficits, which could have skewed the caregiver burden. Moreover,
292 family caregivers tend to minimize their personal health problems in an effort to emphasize the
293 primacy of the care and needs of the patient they are responsible for.

294

295 **Conclusion**

296 The FCs of ABI patients in Oman commence the caregiver role when they are in good health, but
297 with inadequate preparation, and shortly a large number experience a high caregiving burden. The
298 ABI patients are discharged from acute care when they still have multiple severe symptoms
299 associated with ABI, and this situation escalates the caregiver burden. The process of in-hospital
300 care for ABI patients should be augmented with interventions to enhance the FCs' caregiving
301 preparedness in order to enhance the outcomes of both the caregiver and the patient. Additionally,
302 the healthcare system needs to be augmented with neurorehabilitation services as a way of
303 improving patient outcomes and reducing the FC's burden.

304

305 **Authors' Contribution**

306 JKM, HR, and DJ conceptualized and planned the study. HR, WA, FA, and DJ collected the data
 307 and carried out measurements. JKM, HR, and DJ supervised the study and acquired the funding.
 308 JKM and ERL analyzed and interpreted the data. JKM, HR, and ERL wrote the draft manuscript
 309 with critical feedback and help from DJ, WA, and FA. All authors were involved in the study
 310 investigation, discussed the results, and approved the final version of the manuscript

311

312

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 314 Khoula Hospital for their cooperation during data collection.

315

316 **Conflict of Interest**

317 The authors declare no conflicts of interest.

318

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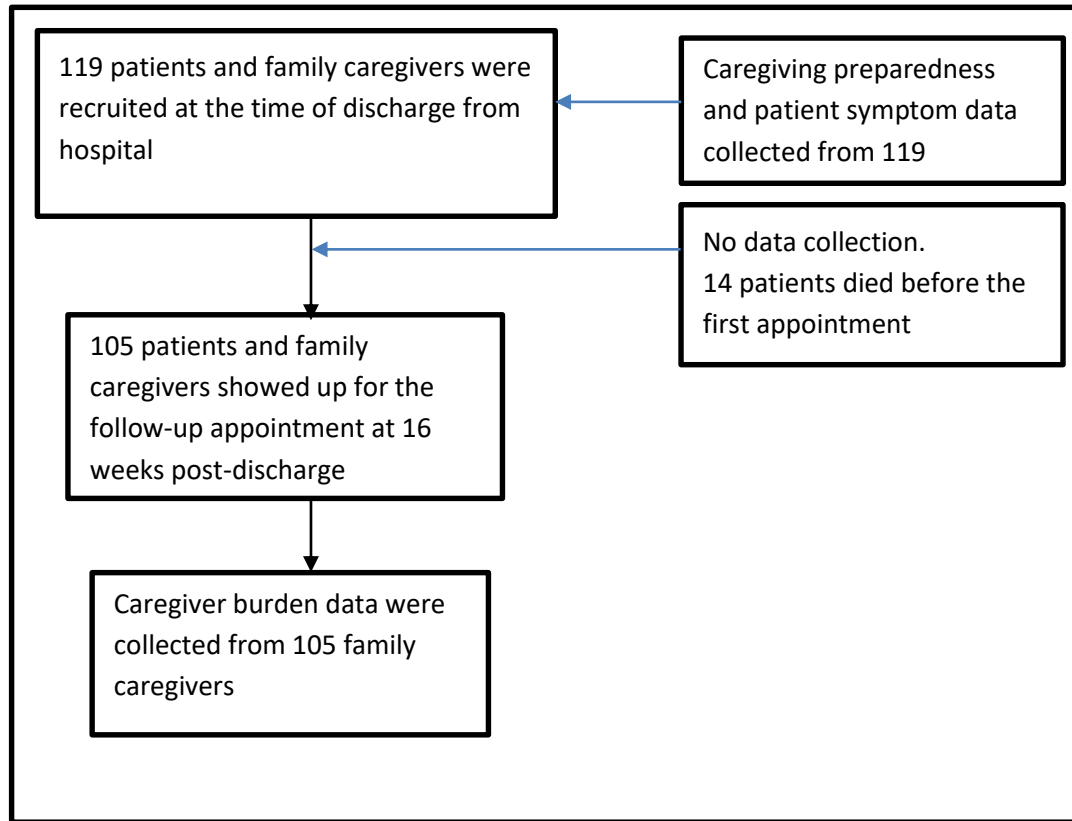
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Figure 1. Flow chart

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Accepted

417 **Table 1: Characteristics of the family caregivers and patients**

Characteristic		FCs (n=119)	Patients (n=119)
		f (%)	f (%)
Gender	Male	55 (44.5)	68 (57.1)
	Female	66 (55.5)	51 (42.9)
Age in years	18-38	66 (55.5)	18 (15.1)
	39-59	50 (42)	22 (18.5)
	60-80	3 (2.5)	59 (49.5)
	≥ 81	--	20 (16.8)
Marital status	Single	22 (18.5)	12 (10.1)
	Married	93 (78.2)	71 (59.7)
	Separated/divorced/widowed	4 (3.4)	36 (30.3)
Level of education	≤ High school	90 (75.6)	114 (95.8)
	Associate degree/Diploma	7 (5.9)	1 (0.8)
	≥ Bachelor's degree	22 (18.4)	4 (3.1)
Employment status	Full-time	68 (57.1)	44 (37)
	Part-time	9 (7.6)	6 (5)
	Unemployed	42 (35.3)	69 (58)
Relationship to patient	Parent	43 (36.1)	--
	Spouse	13 (10.9)	--
	Child	46 (38.7)	--
	Sibling	14 (11.8)	--
	Legal guardian	3 (2.5)	--
Has other family members who need care	No	114 (95.8)	--
	Yes	5 (4.2)	--
Cause of injury or patient diagnosis	Trauma (MVA and assault)	--	36 (30.3)
	Aneurysm	--	16 (13.4)
	Stroke	--	67 (56.3)
Length of time since the injury occurred (days)	1 – 180	--	66 (55.5)
	181 – 360	--	6 (5)
	≥ 361	--	47 (39.5)
Glasgow coma scale on admission	13 - 15 (Mild)	--	5 (4.2)
	9 - 12 (Moderate)	--	62 (52.1)
	8 (Severe)	--	52 (43.7)
Glasgow coma scale at the time of discharge	13 - 15 (Mild)	--	103 (86.6)
	12 (Moderate)	--	16 (13.4)

418 MVA, Motor vehicle accident, FCs, family caregivers

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422 **Table 2: Symptom profile of acquired brain injury patients at the time of discharge**

Symptom	Severity Rating				M ± SD
	No Difficulty	Mild Difficulty	Moderate Difficulty	Severe Difficulty	
	%	%	%	%	
Ability to live independently	0.8	0.8	3.4	95	4.92 ± 0.44
Loss of muscle strength, paralysis, limited physical mobility, or poor coordination	1.7	1.7	21.8	73.9	4.68 ± 0.68
Change in speech or difficulty being understood	6.7	7.6	12.6	73.1	4.45 ± 1.10
Mood problems (including depression, anxiety, denial, and frequent change in emotion)	5.9	13.4	22.7	58	4.27 ± 1.09
Loss of memory and concentration	9.2	16.9	16	63	4.25 ± 1.24
Changes in behavior, aggression, anger, impulsiveness, and others	6.7	20.2	24.4	48.7	4.08 ± 1.14
Insomnia	10.9	20.2	22.7	46.2	3.93 ± 1.29
Blurred or loss of vision	16.8	10.9	26.9	45.4	3.84 ± 1.44
Loss of hearing or ringing in the ears	21	13.4	22.7	42.9	3.66 ± 1.54

423

424 **Table 3: Family caregivers' quality of life, caregiving preparedness, and caregiving burden**

Variable	level	%	Median	Mean	SD	SE
SF-12 Physical component summary (n= 119)	Poor (≤ 50)	16.8	91.67	79.24	24.08	2.21
	Good (≥ 51)	83.2				
SF-12 Mental component summary (n =119)	Poor (≤ 42)	9.2	65	63.31	15	1.38
	Good (≥ 43)	90.8				
Caregiving preparedness (n=119)	Low (≤ 19)	58	16	17.52	9.29	0.85
	High (≥ 20)	42				
Caregiving burden (n= 105)	Low (≤ 24)	81.9	18	16.98	8.76	0.85
	High (≥ 25)	19.1				

425 SD, standard deviation; SE, standard error of the Mean

426

427 **Table 4: Factors associated with caregiving preparedness and burden (n= 105)**

Factor	Caregiving preparedness		Caregiving burden	
	<i>r</i>	<i>p</i> -value	<i>r</i>	<i>p</i> -value
Caregiving preparedness at the time of discharge from the hospital			- 0.545	< 0.01**
FC mental health status at the time of patient discharge	-0.267	< 0.01**	-0.315	< 0.01**
FC physical health status at the time of patient discharge	-0.249	0.006**	0.045	0.65
Glasgow's coma score at the time of discharge from the hospital	0.156	0.090	-0.227	0.020*
Symptom severity score at the time of discharge from the hospital	-0.381	< 0.01**	0.427	< 0.01**
Length of time since patient injury (in days)	0.609	< 0.01**	-0.431	< 0.01**

428 **Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05
 429 level (2-tailed); *r* = Pearson's Correlation; FC = family caregiver

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431 **Table 5: Predictors of caregiving preparedness and caregiver burden**

Dependent variable	Factor	Unstandardized Coefficient		<i>t</i>	<i>p</i> -value	95% CI
		β	SE			
Caregiving preparedness	Constant	23.59	4.45	5.30	< 0.01	14.76 – 32.41
	Length of time since patient injury (in days)	0.01	0.00	5.99	< 0.01	0.0 – 0.01
	Symptom severity score	-0.28	0.09	-3.35	< 0.01	- 0.45 – -0.12
	FC physical health status	-0.13	0.03	-4.11	< 0.01	-0.20 – -0.07
	FC mental health status	-0.20	0.05	-3.82	< 0.01	0.10 – 0.30
Caregiver burden	Constant	18.996	5.174	3.67	< 0.01	8.73 – 29.24
	Caregiving preparedness	-0.37	0.08	-4.48	< 0.01	-0.53 – -0.21
	Symptom severity score	0.30	0.10	3.06	< 0.01	0.11 – 0.49
	FC mental health status	-0.10	0.05	-2.22	0.028	-0.19 – -0.11

432 CI, confidence interval; SE, standard error; FC, family caregiver