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7 **Beyond Stories: Evidence-Based Benefits of Psychiatric Assistance Dogs for Youth**

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Abstract

26 Psychiatric assistance dogs may offer a promising form of support for individuals with severe
27 mental health challenges, yet systematic research remains limited, particularly among civilians,
28 as most existing studies have focused on veterans or other uniformed populations. This article
29 reports findings from three complementary studies examining the effects of psychiatric
30 assistance dogs on the quality of life of adolescents and young adults in the Netherlands (16–30
31 years) with severe psychosocial problems. In a cross-sectional questionnaire study ($n = 141$),
32 participants who had lived with their dog for more than two years reported significantly higher
33 quality of life than those with shorter partnerships. A six-month longitudinal study ($n = 9$)
34 showed significant increases in quality of life across 12 repeated measurements among
35 participants who had only recently been matched with their dogs. Qualitative interviews ($n = 13$)
36 provided further insight, revealing an initial adjustment period followed by improvements in
37 psychological and social well-being. Thematic analysis highlighted hope (seeing a future again),
38 enhanced social participation and independence, and companionship with the dog as the most
39 prominent benefits mentioned in the interviews. Taken together, the three studies provide
40 converging evidence that psychiatric assistance dogs can meaningfully enhance daily
41 functioning, quality of life, and social connectedness for young civilians with mental health
42 difficulties. Importantly, this research demonstrates measurable and robust benefits, showing that
43 the impact of psychiatric assistance dogs extends beyond stories and into demonstrable
44 improvements in people's lives, provided the dog's welfare is safeguarded.

45

46 **Keywords:** Service dogs; Quality of Life; Psychosocial Problems; Civilians; Well-being.

47 **Beyond Stories: Evidence-Based Benefits of Psychiatric Assistance Dogs for Youth**

48 Adolescents and young adults with severe psychosocial and psychiatric problems often face
49 profound limitations in their daily lives. Conditions such as trauma, anxiety, attachment
50 disorders, severe depression, eating disorders, or autism spectrum disorder can make even basic
51 activities—like social participation, grocery shopping, or attending school or work—extremely
52 difficult or impossible (Rapee et al., 2012). Many are neither employed nor in education, and
53 because their disabilities are often invisible, they are frequently misunderstood by both the public
54 and institutions, leaving their lives largely confined to their homes (Rahman et al., 2023).

55 Mental health problems typically emerge during adolescence or young adulthood (McGorry &
56 Van Os, 2013), and can lead to severe psychosocial impairments (Lynam et al., 2007). Between
57 20% and 60% of patients experience “treatment resistance,” with symptoms persisting despite
58 standard interventions (Howes et al., 2022). This not only causes substantial personal suffering
59 but also dramatically increases healthcare costs, up to ten times higher than for individuals
60 without treatment resistance. Comorbid conditions further worsen outcomes and are associated
61 with lower quality of life (Forman-Hoffman et al., 2018). For young people who do not
62 sufficiently benefit from standard therapies, alternative forms of support are needed.

63 Psychiatric assistance dogs (in the U.S. often called psychiatric service dogs, cf. Foltin & Glenk,
64 2023) offer a promising option for this target group. These specially trained dogs can enhance
65 independence, facilitate social engagement, and provide emotional regulation, thereby improving
66 psychosocial functioning and quality of life (Tedeschi et al., 2010). They can help a person with
67 PTSD assess whether a space is safe, reduce acute anxiety through physical contact, or support
68 someone with panic disorder, autism or agoraphobia in (re-)entering social situations. Some dogs
69 monitor sleep patterns to prevent nightmares, assist in managing dissociative episodes, or
70 maintain personal space in crowded environments (Assistance Dogs International, 2024; Lloyd et
71 al., 2019; Nieforth et al., 2023; Rodriguez et al., 2020; Tedeschi et al., 2010). Meaningful
72 benefits for participation and well-being arise when assistance dogs are carefully trained,
73 supported, and matched to the needs of both human and dog, with safeguarding canine welfare as
74 a necessary condition (Foltin & Glenk, 2023). Their role can be comparable to guide dogs for the

75 blind or mobility service dogs, offering essential assistance that benefits both human
76 independence and animal engagement (Gravrok et al., 2020).

77 The literature on the effects of psychiatric assistance dogs is relatively recent (Leighton et al.,
78 2022), with empirical studies conducted in the United States (Bergen-Cico et al., 2018; Leighton
79 et al., 2024; Nieforth et al., 2023; O'Haire & Rodriguez, 2018; Rodriguez et al., 2020, 2021),
80 Canada (Vincent et al., 2019), the Netherlands (Van Houtert et al., 2022), and Australia (Lloyd et
81 al., 2019; Gravrok et al., 2020). Research in North America and the Netherlands has largely
82 focused on veterans, supported by dedicated programs that provide funding, infrastructure, and,
83 in some cases, access to waitlist control groups. These studies highlight benefits for veterans
84 with PTSD, a population at heightened risk due to occupational trauma (Terhakopian et al.,
85 2008), primarily showing reductions in PTSD symptoms as well as improvements in self-
86 reported well-being. Australian studies have examined broader civilian populations. For
87 example, a survey of 199 individuals with depression, anxiety, or bipolar disorder found that
88 94% reported reduced anxiety and tension from their assistance dog, along with greater
89 confidence in leaving home and engaging with society (Lloyd et al., 2019). Overall, these
90 findings suggest that psychiatric assistance dogs can provide meaningful support, although
91 civilian research remains limited, partly due to challenges in funding and recruitment.

92 The fastest-growing group of assistance dogs are those supporting individuals with psychiatric
93 disabilities. Yet most countries lack centralized registration systems, leaving no legal
94 requirement to verify training or accreditation (Foltin & Glenk, 2023). With demand rising, fully
95 trained adult dogs are scarce, and many organizations—both accredited and non-accredited—
96 rely on team training models, in which clients raise and train a puppy under professional
97 supervision (European Guide Dog Federation, 2024). While less costly than fully pre-trained
98 dogs, team training still entails considerable expense.

99 In Europe, the typical cost of training a psychiatric assistance dog ranges from €10,000 to
100 €30,000. Funding usually falls to the client, though some support may come from foundations,
101 crowdfunding, or legal provisions (Rehacare, 2021). Some countries provide frameworks that
102 can potentially enable reimbursement. In the Netherlands, for example, the Social Support Act
103 (Wmo) allows municipalities to grant support for independent living, potentially including a

104 psychiatric assistance dog. In practice, however, access varies widely by municipality and
105 caseworker, with denials often based on the perceived lack of civilian-focused research, and
106 funding is usually uncertain and difficult to obtain through this route (Van der Helm, 2025). This
107 highlights the urgent need for systematic evidence beyond veteran populations, particularly
108 among adolescents and young adults.

109 In summary, adolescents and young adults with severe psychosocial and psychiatric problems
110 face significant challenges in daily life, including social participation, education, and
111 employment. Standard treatments are often insufficient, particularly with comorbidities, leaving
112 quality of life severely reduced (Ezpeleta et al., 2001). Psychiatric assistance dogs may offer
113 unique support by enhancing independence, regulating emotions, and facilitating social
114 engagement for individuals with conditions such as PTSD, anxiety, or agoraphobia (Assistance
115 Dogs International, 2024; Tedeschi et al., 2010; Lloyd et al., 2019). However, access remains
116 inconsistent, limited by scarce civilian-focused research and uneven funding.

117 To strengthen the evidence base, this article presents three complementary studies examining the
118 impact of psychiatric assistance dogs on the quality of life of adolescents and young adults in the
119 Netherlands. Specifically, we report findings from a large-scale cross-sectional questionnaire, a
120 six-month within-subject longitudinal study, and a qualitative interview study. Together, these
121 studies offer a multifaceted perspective on how psychiatric assistance dogs may contribute to
122 daily functioning and well-being in this under-researched population. Based on prior research
123 showing benefits of psychiatric assistance dogs for psychosocial functioning (Leighton et al.,
124 2024; Lloyd et al., 2019; Nieforth et al., 2023; O'Haire & Rodriguez, 2018; Rodriguez et al.,
125 2020; Van Houtert et al., 2022), we hypothesize that ownership of a psychiatric assistance dog
126 will positively influence quality of life.

127 **Method**

128 This research consisted of three studies, each addressing the overarching question of how
129 psychiatric assistance dogs affect quality of life, approached through different methodological
130 lenses. The cross-sectional questionnaire provided a broad overview of quality-of-life outcomes
131 in a large sample. The six-month within-subject longitudinal study captured individual changes

132 over time, offering stronger indications of causality. Finally, the qualitative interview study
133 explored lived experiences in depth, giving context and nuance to the quantitative findings.
134 Ethical approval was obtained from the host university's ethics committee (#PED-2324-S-0001).

135 **Participants**

136

137 **Study 1**

138 Participants for Study 1 were recruited through social media and online communities for
139 assistance dog owners. Eligibility criteria were: (a) being 16–30 years old, (b) owning a
140 psychiatric assistance dog (either fully trained or still in training) or being in the process of
141 acquiring one, and (c) currently receiving or having previously received mental health support
142 for psychosocial problems. Of the 278 respondents, 154 remained after excluding cases with
143 missing demographic or quality-of-life data. For the analysis of Study 1 (see below), we further
144 excluded respondents who were still in the process of acquiring a dog, resulting in a final sample
145 of 141 participants. Descriptive statistics are presented in Table 1.

146

147 **Study 2**

148 Participants for Study 2 were drawn from Study 1 respondents who agreed to participate in
149 follow-up research. Eleven were selected: two in the early stages of acquiring a psychiatric
150 assistance dog and nine who were partnered with their dog for less than six months. All
151 consented to a six-month study, but the two participants awaiting the dogs did not receive them
152 during the study period and were excluded. Demographic information is presented in Table 1.

153

154 **Study 3**

155 Participants for Study 3 were drawn from Study 1 respondents who expressed interest in further
156 research and were *not* part of Study 2. Eighteen individuals were initially selected to ensure
157 diversity in age, gender, education, type of training, and duration of partnership with their
158 assistance dog. Thirteen completed interviews; five were unavailable due to scheduling conflicts
159 or non-response (see Table 1). As in the other two studies, all participants had a history of mental
160 health support for severe psychosocial problems. Although diagnoses were not specifically
161 requested, several participants voluntarily reported multiple comorbid conditions, including

162 autism spectrum disorder, eating disorders, personality-related difficulties, attachment problems,
163 and (complex) PTSD.

164

165 **Procedure**

166 At the start of each study, participants were informed about the study procedures, including
167 anonymization, voluntary participation, and their right to ask questions or withdraw at any time.
168 This information, initially provided during recruitment, was reiterated at each data collection
169 point, and participants provided written consent for the use of their data at every stage.

170

171 ***Study 1***

172 This cross-sectional study was conducted using an online questionnaire (Qualtrics, Provo, UT).
173 Control questions verified each inclusion criterion (see above). The survey included items on
174 demographics, assistance dog ownership, quality of life, and experiences across the different
175 stages of acquiring and living with a psychiatric assistance dog.

176

177 ***Study 2***

178 This within-subjects study was conducted using bimonthly online questionnaires over a six-
179 month period (Qualtrics, Provo, UT). Participants completed a questionnaire at the start and
180 midpoint of each month when receiving a text message on their phones. If not completed on the
181 first day, reminders were sent the following day and again on the fourth day; if still incomplete,
182 the measurement was coded as missing. The questionnaire included items on quality of life,
183 assistance dog ownership, and the cooperation between dog and owner.

184

185 ***Study 3***

186 Interviews were conducted between January and May 2024, either on-site or online, based on
187 participant preference, and lasted 45–60 minutes on average. Interviews were carried out by the
188 first author and by experienced experts (co-authors of this paper) trained in research skills. On
189 occasion, two master's students also conducted interviews after receiving training and
190 supervision from the authors. Prior to the interview, participants signed a consent form agreeing
191 to audio recording. Each interview was organized into four sections covering different question
192 categories (see Table 3). To ensure ethical sensitivity, participants were not directly asked about

193 their medical history, psychiatric diagnoses, or reasons for obtaining a psychiatric assistance dog.
194 Any voluntarily disclosed information was analyzed when relevant to the research questions.
195 Interviews were transcribed verbatim using Amberscript or Microsoft Word and manually
196 checked for accuracy.

197

198 **Measurements**

199 *Study 1*

200 **Quality of Life.** Participants' general quality of life and well-being were measured using an
201 adapted Dutch version of the KIDSCREEN-10 Index (Ravens-Sieberer et al., 2010). This version
202 was suited to our relatively young sample and was integrated into the online questionnaire.
203 Adaptations included changing references from "week" to "month" and modifying items to
204 better fit the young adult sample. An example item is: "[Thinking about the last month], have
205 you felt full of energy?" The scale used response options ranging from 1 = never to 5 = always
206 and demonstrated good internal consistency in this sample (Cronbach's $\alpha = .85$). See Table 2 for
207 the full scale.

208 **Assistance dog ownership.** Participants' experiences with their assistance dogs were explored
209 through open-ended questions on timing and impact of the dog's arrival, changes in daily life,
210 challenges of ownership, and the personal significance of their dog.

211

212 *Study 2*

213 **Quality of Life.** Participants' general quality of life and well-being were assessed using the same
214 adjusted Dutch version of the KIDSCREEN-10 Index as in Study 1 (Ravens-Sieberer et al.,
215 2010), with minor adaptations for a two-week reference period (see Table 2). Cronbach's alpha
216 for this sample was $\alpha = .83$.

217 **Assistance dog ownership.** Participants' experiences with their assistance dogs were assessed
218 using open-ended questions focusing on the past two weeks. Questions addressed the current
219 stage of the assistance dog process, progress in training, quality of cooperation between
220 participant and dog, and daily activities. Participants also reported both the activities they had
221 engaged in (e.g., meeting friends, grocery shopping) and those they had wanted to do but were
222 unable to complete. To capture this, they selected from a list of 14 activities, with an additional
223 "other" option to specify activities not included in the list.

224

225 ***Study 3***

226 The semi-structured interviews were conducted consistently across participants (example
227 questions in Table 3). A codebook (Appendix A) was developed to analyze participants'
228 statements on their quality of life throughout the interview. Initially, three main categories,
229 'psychological functioning,' 'social functioning,' and 'physical functioning' were drawn from
230 prior research (biopsychosocial model, see Engel, 1977). Two additional categories, 'general
231 functioning' and 'dog-owner relationship' emerged during coding. Subcategories were generated
232 bottom-up by clustering quotes with similar meanings. Cross-validation by two researchers
233 achieved 81.9% interrater agreement on a substantial subset of codes (25%), with all
234 discrepancies resolved through discussion to reach full consensus. The final codebook was
235 approved by three experienced experts.

236

237 **Analysis**238 ***Study 1***

239 In Study 1, the two reverse-scored items of the KIDSCREEN-10 Index (Ravens-Sieberer et al.,
240 2010) were first recoded, and all responses were then averaged to create a single quality-of-life
241 score for each participant. Participants were then divided into two groups based on the duration
242 of their partnership with the assistance dog: 75 with dogs still in training or partnered for less
243 than two years, and 66 with dogs who had completed training and had been together for more
244 than two years. A cutoff of two years was selected, as dogs are generally considered fully mature
245 and have typically completed their training by this age. Assumptions for inferential statistics
246 were checked. Normality was not violated ($W = 0.98, p = .42$ for participants who were with
247 their dog less than 2 years; $W = 0.99, p = .81$ for participants who were with their dog for more
248 than 2 years), and Levene's test indicated homogeneity of variances ($F(1,139) = 0.48, p = .49$).
249 No outliers were detected. Group differences in quality of life were analyzed using a *t*-test.
250 Open-ended responses were used to supplement and clarify the quantitative findings.

251

252 ***Study 2***

253 In Study 2, we first assessed whether the data met the assumptions for longitudinal analysis.
254 Shapiro-Wilk tests indicated that normality was satisfied for all 12 measurement occasions (all W

255 > 0.8 , $p > .05$), and only two isolated outliers were observed, which were deemed non-influential
256 after comparing analyses with and without these cases. The two reverse-scored items of the
257 KIDSCREEN-10 Index (Ravens-Sieberer et al., 2010) were recoded, and for each participant, a
258 mean score across the quality-of-life items was calculated at each measurement point to
259 represent overall quality of life. One participant had missing data at four time points (5, 8, 10,
260 and 11); these were imputed using the participant's average from earlier completed
261 measurements. Longitudinal analyses were then conducted on the full scale and its components
262 using a Friedman test. Open-ended responses were incorporated to provide additional context
263 and clarify the quantitative findings.

264

265 **Study 3**

266 Qualitative coding followed the pre-established categories described in the measurement section
267 (Engel, 1977), with two additional categories: 'dog-owner relationship' and 'general
268 functioning' to capture unique aspects of assistance dog ownership. Subcategories were derived
269 inductively from participants' statements. Each coded unit was assigned a positive, negative, or
270 neutral valence to allow comparison across life domains. Codes were analyzed within their main
271 categories (see Figure 1) and integrated to provide a comprehensive view of participants'
272 experiences.

273

274 **Results**

275

276 **Study 1: Questionnaire**

277 ***Quality of Life***

278 The mean quality of life of participants who were together with their assistance dog for less than
279 two years ($n = 75$) was 2.96 ($SD = 0.60$), whereas the mean quality of life for the group that had
280 been together with their assistance dog for over two years ($n = 66$) was 3.29 ($SD = 0.56$). A t -test
281 showed that this difference was statistically significant, $t(139) = -3.39$; $p = .001$; 95% CI (-0.53, -
282 0.14). The effect size, as measured by Cohen's d , was 0.57, indicating a moderate effect.

283 ***Open-ended Responses***

284 When asked how long it took to notice changes after their assistance dog's arrival, one
285 participant summarized: "*Pretty much immediately, but the big changes occurred in the long*

286 "run" (Participant #33). Many noted that the most significant changes occurred as their dog
287 reached adulthood. Reflections on the dog's impact often expressed gratitude, with confidence in
288 daily life emerging as a central theme. Participants commonly reported needing less care or
289 medication, or experiencing greater benefit from ongoing treatment. A few, however, mentioned
290 challenges, including the responsibility of caring for their dog and negative interactions in
291 public.

292

293 **Study 2: Within-Subjects Study**

294 ***Quality of Life***

295 Figure 2 shows the mean quality of life across all participants over 12 measurement points.
296 Scores rose from 2.9 at baseline to 3.1 at measurement 2, dipped slightly at measurements 3 and
297 4, and then increased gradually, stabilizing at measurements 10–12 around 3.3. A Friedman test
298 indicated that this overall increase was statistically significant, $\chi^2(11) = 21.64, p = .03$, with
299 Kendall's $W = .22$, indicating a small to moderate effect size.

300 ***Open-ended Responses***

301 At each measurement point, participants were asked to report on their activities over the past two
302 weeks, such as meeting friends or grocery shopping. The average number of activities increased
303 from 5–6 at the first measurement to about 9 at the final measurement. In parallel, unmet activity
304 needs decreased: while five participants at the first measurement reported being unable to do a
305 desired activity (vs. four who did not), by the final measurement only two participants reported
306 such limitations (vs. seven who did not).

307

308 **Interviews**

309 ***Psychological Functioning***

310 **Self-Image.** Several participants described changes in their self-image due to interactions with
311 their dog. These ranged from increased self-awareness of impatience (through the dog's
312 mirroring behavior), to greater self-worth from engaging in meaningful daily activities, and
313 stronger awareness of personal boundaries. Many also reported becoming more attuned to early
314 signs of panic or overstimulation, enabling them to manage or prevent panic attacks. All of these
315 changes were experienced positively.

316 **Hope.** Hope was another recurring theme. Participants described regaining a sense of future—
317 envisioning a more active and independent life. These feelings often began when considering an
318 assistance dog but became stronger once the dog was present. For some, the (prospect of the) dog
319 even became a lifeline during severe suicidality, as participant 9 put it: “*This or euthanasia.*”
320 **Stress.** Most participants reported reduced stress and shorter stress episodes. Dogs performed
321 tasks such as deep pressure therapy (using their body weight to calm the owner) which
322 participants said helped counter dissociation, flashbacks, and overstimulation. Participant 7
323 explained: “*Yeah, just the tension and stress does not rise as high. And if it does, it mellows out*
324 *quicker which just makes it less tiring.*” Some participants, however, noted new stressors, such
325 as the perceived high expectations of living with a psychiatric assistance dog.
326 **General.** More general comments on psychological functioning often centered on a greater sense
327 of stability. Some participants were able to reduce or stop medication use, while others
328 mentioned being able to continue their gender transition journey.

329

330 ***Social Functioning***

331 **Social Participation.** The most common theme across interviews was social participation.
332 Participants enthusiastically described being able to leave the house, use public transport, return
333 to school or work, and live more independently. As Participant #1 put it: “*We go to grocery*
334 *stores, museums, parks, wow, amazing progress.*” These changes were both practical and
335 financially beneficial, reducing reliance on disability benefits and contributing to improved
336 mental health. However, some reported that limited access to certain public spaces (e.g.,
337 unjustified denial) or housing occasionally restricted their independence.

338 **Grounding.** Despite the stress often experienced in public spaces, participants described feeling
339 safer and calmer when accompanied by their assistance dog. Dogs were frequently trained to
340 create space between their owner and others or to redirect attention back to the dog, which
341 participants reported as grounding.

342 **Relations to Other People.** Participants reported that owning an assistance dog greatly
343 influenced how they were perceived by others. In public, they often faced negative reactions
344 such as glares, invasive comments, or online harassment. In contrast, familiar people responded
345 more positively, with many participants noting renewed friendships or improved family
346 relationships. Participant 9 explained that their partner now felt more like an equal: “*It’s not the*

347 *case anymore that my boyfriend is constantly tending to me like a caregiver; he can let loose a*
348 *bit more now.*"

349

350 ***Physical Functioning***

351 **Daily Routine.** Owning a dog in general may help to structure daily life. Multiple participants
352 discussed the increased ease of getting up in the morning and the ability to better take care of
353 themselves alongside the care for their dog. Participant 3 shared that: "*It was a lot easier to get*
354 *out of bed, for her [the dog].*"

355 **Sleep.** Participants sometimes experienced sleep-related problems such as insomnia, nightmares,
356 or a general sense of restlessness. Their assistance dogs were trained to recognize these
357 experiences and intervene, which was reported as positive and helpful.

358 **Getting Outside.** Establishing a daily routine often came with an increased amount of time spent
359 outside of the house, which participants experienced as providing a temporary boost to their
360 well-being.

361 **Physical Activity.** A couple of participants discussed a change in their ability to engage in
362 sports, and specifically the capability of doing this in public due to the company of their
363 assistance dog.

364

365 ***Dog-owner Relationship***

366 **Connection.** The second most common theme was the bond between dog and owner, described
367 as companionship, attunement, and trust. Participant #13 captured this connection: "*Someone*
368 *that is just constantly with you, looking out for you, thinking along with you, and helpful when*
369 *you need it.*" While this interdependence was largely experienced positively, some participants
370 expressed concern about setbacks if their dog became ill or unable to perform tasks.

371 **Fun.** Participants also discussed ways they ensured sufficient relaxation and enjoyable moments
372 for both the dog and themselves. They mentioned activities such as agility courses, as well as
373 simply spending time and relaxing together.

374 **Stress.** Not all aspects of assistance dog ownership were considered positive. Participants often
375 reported stress during financing and training, challenges with dog temperament or puberty, and
376 sometimes anticipatory grief. Participant 2 commented on temperament issues: "*We are both*
377 *quite sensitive, which does work against us at times.*"

378

379 **General Functioning**

380 **Short-term.** In the early stages of acquiring and adjusting to their assistance dog and the
381 training, most participants experienced some struggle. For some, the changes were so significant
382 that adaptation was challenging. Participant #2 reflected: *“The first year was really quite*
383 *intense.”*

384 **Long-term.** Long-term reflections on general functioning painted a positive picture. When asked
385 about their current situation, many participants, well into the process, reported clear benefits.
386 They compared their present lives with the past, emphasizing how much their dog had helped.
387 Participant #13 stated: *“That it makes a change in the whole feasibility of life, which is becoming*
388 *bigger and bigger for me.”*

389

Discussion

390 In this study, we examined adolescents and young adults in the Netherlands (16–30 years) with
391 severe, often comorbid psychosocial problems. We assessed the impact of psychiatric assistance
392 dogs using three complementary approaches: a cross-sectional questionnaire ($n = 141$), a six-
393 month longitudinal study ($n = 9$), and qualitative interviews ($n = 13$). Across methods, results
394 consistently indicate that psychiatric assistance dogs enhance daily functioning and well-being.
395 In the cross-sectional survey, participants who had been with their dog for more than two years
396 reported significantly higher quality of life than those with less than two years of partnership. In
397 the longitudinal study, which followed participants who had just been with their dog for a short
398 period of time (less than six months), quality of life increased significantly over a six-month
399 period with 12 measurements. Although earlier studies in specifically veterans with PTSD
400 reported mixed effects on global quality of life (Leighton et al., 2022), our findings, along with
401 recent research in other populations (Leighton et al., 2024; Lloyd et al., 2019; Nieforth et al.,
402 2023; Rodriguez et al., 2020; Van Houtert et al., 2022; Vincent et al., 2019), suggest that
403 psychiatric assistance dogs can meaningfully improve quality of life, with benefits apparent both
404 immediately and over the longer term.

405 Qualitative interviews supported and enriched these findings. Participants described an initial
406 adjustment period, sometimes accompanied by managing high expectations, followed by
407 improvements, mostly in psychological and social well-being. The most prominent themes were

408 hope (a sense of a future to look forward to), increased social participation and independence,
409 and companionship, attunement, and trust with their dog. Together, the results from all three
410 studies provide converging evidence that psychiatric assistance dogs can meaningfully enhance
411 daily functioning and overall quality of life in this under-researched population.

412 The latter point is particularly important, as funding for psychiatric assistance dogs is still
413 frequently denied on the grounds that most available research has been conducted with veterans
414 or other uniformed personnel (Van der Helm, 2025). According to participants in our study, this
415 perceived lack of civilian-focused evidence has resulted in funding denials from municipal
416 caseworkers when participants applied for financial support for their psychiatric assistance dogs
417 (Van der Steen et al., 2024). While it is true that veterans are at elevated risk of mental health
418 problems such as PTSD due to occupational exposure (Terhakopian et al., 2008), PTSD is not
419 unique to military contexts. Both the ICD-11 and DSM-5 manuals identify combat as only one of
420 many potential traumatic events, and approximately 7% of the general population with trauma
421 exposure develop PTSD (De Vries & Olff, 2009). The fact that we observe similar outcomes
422 among civilian participants strengthens the argument that access to, and funding for, psychiatric
423 assistance dogs should not be contingent upon occupational history.

424 Another noteworthy finding is that the companionship, and thus the positive impact of the
425 partnership on quality of life and participation, appears to develop gradually rather than
426 immediately. This pattern emerged consistently across both the questionnaire data and the
427 interviews. In the short term, our longitudinal study found a significant but modest improvement
428 in quality of life immediately after the partnership began. Over the longer term, however, the
429 larger questionnaire study showed that participants partnered with adult dogs (two years or older)
430 who had completed training reported substantially higher quality of life than those still in
431 training or partnered for a shorter period. These results align with findings from research on
432 Canadian veterans with PTSD, where the beneficial effects of living with a psychiatric assistance
433 dog on well-being were shown to increase over an 18-month period (Vincent et al., 2019).

434 This gradual pattern may also characterize our participants, most of whom engaged in team
435 training—the predominant approach to training psychiatric assistance dogs in the Netherlands—
436 and may partly reflect a mismatch between initial expectations (“once I am with the dog, I will

437 feel different") and the realities of the early stages, such as the challenges of puppyhood and
438 adolescence. Over time, participants appeared to reach a more stable phase in which they and
439 their dogs worked together more effectively. Beyond these developmental factors, research on
440 animal-assisted services highlights attunement or synchrony as a key mechanism of benefit
441 (Griffioen et al., 2020). It is therefore plausible that, regardless of the dog's developmental stage,
442 time is needed for the dyad to establish effective coregulation, a process reflected in the short-
443 term struggles reported by some participants.

444 **Limitations and future directions**

445 Participants were recruited through social media and online communities for assistance dog
446 owners, yielding a heterogeneous sample in age, partnership duration, training methods, and
447 assistance dog organizations. Participation was voluntary, so the sample should be considered a
448 convenience sample. In Study 1, we disclosed the topics addressed. However, participants were
449 not told that we would examine quality of life in relation to partnership duration, making
450 response bias unlikely. In Study 2, participants were explicitly informed that we were interested
451 in changes in quality of life and participation over time. The high number of assessments (12),
452 combined with the online survey format in which previous responses were not visible, suggests
453 that response bias likely did not meaningfully affect the findings, although it cannot be ruled out.
454 Selection bias requires more consideration for Study 3 interviews. Of the 18 individuals initially
455 contacted, 5 were not interviewed due to scheduling conflicts or unsuccessful follow-up. Reasons
456 for non-participation remain unclear, and some may have been experiencing psychological
457 distress, which could have influenced the findings had they been included.

458 The three studies presented here indicate that psychiatric assistance dogs are associated with
459 positive effects on quality of life, with study designs chosen as appropriate alternatives given the
460 challenges of establishing traditional control groups. While studies with control groups, ideally
461 active controls receiving alternative interventions, as suggested in animal-assisted services
462 research (Van der Steen et al., 2025), would add rigor, randomized controlled trials are ethically
463 and practically challenging, as randomly assigning individuals to receive or not receive a dog is
464 neither feasible nor acceptable. Nevertheless, the high demand for assistance dogs and the staged
465 nature of team training make multiple baseline designs a promising alternative (Hawkins et al.,

466 2007), allowing participants to act as their own controls and reliably detect intervention-related
467 changes. These designs can be strengthened by coupling them with ecological momentary
468 assessment (Shiffman et al., 2008), where participants report on emotional states and activities at
469 varying times, as in the study of Leighton et al. (2024) on veterans with PTSD. Future research
470 could further strengthen the evidence base by examining the perspectives of mental health
471 professionals and caseworkers involved in funding decisions for psychiatric assistance dogs.

472

473 **Conclusion**

474 Overall, the quantitative and qualitative findings from three complementary studies provide
475 converging evidence that psychiatric assistance dogs can substantially enhance quality of life,
476 participation, and social connectedness for young people with severe psychosocial problems.
477 These benefits appear to emerge gradually as companionship develops, with results pointing to
478 sustained improvements over time. Importantly, the present studies demonstrate that such
479 outcomes are both observable and measurable, advancing the evidence base beyond anecdotal
480 accounts and single-case reports. Taken together, the findings highlight psychiatric assistance
481 dogs as a promising and credible form of support, with the potential to complement existing
482 treatments and to fill critical gaps in care for youth whose needs are not fully met by
483 conventional approaches.

484

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490

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494

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References

496 Assistance Dogs International. (2024). *Assistance Dogs International (ADI) program summary*.497 https://assisteddogsinternational.org/clientuploads/ADI%20Business/ADI_Program_Summary_Vision,Mission,_Governance_2023.pdf

499

500 Bergen-Cico, D., Smith, Y., Wolford, K., Gooley, C., Hannon, K., Woodruff, R., ... & Gump, B. 501 (2018). Dog ownership and training reduces post-traumatic stress symptoms and increases self- 502 compassion among veterans: Results of a longitudinal control study. *The Journal of Alternative 503 and Complementary Medicine*, 24(12), 1166-1175. <https://doi.org/10.1089/acm.2018.0179>

504

505 De Vries, G. J., & Olff, M. (2009). The lifetime prevalence of traumatic events and posttraumatic 506 stress disorder in the Netherlands. *Journal of Traumatic Stress: Official Publication of The 507 International Society for Traumatic Stress Studies*, 22(4), 259-267.508 <https://doi.org/10.1002/jts.20429>

509

510 Engel G. L. (1977). The need for a new medical model: a challenge for biomedicine. *Science 511 (New York, N.Y.)*, 196(4286), 129–136. <https://doi.org/10.1126/science.847460>

512

513 European Guide Dog Federation. (2024). *2023 survey on assistance dogs in Europe*.514 <https://www.egdfed.org/media/1138/european-guide-dog-federation-2023-survey.pdf>

515

516 Ezpeleta, L., Keeler, G., Erkanli, A., Costello, E. J., & Angold, A. (2001). Epidemiology of 517 psychiatric disability in childhood and adolescence. *Journal of Child Psychology and Psychiatry*, 518 42(7), 901-914. <https://doi.org/10.1111/1469-7610.00786>

519

520 Foltin, S., & Glenk, L. M. (2023). Current perspectives on the challenges of implementing 521 assistance dogs in human mental health care. *Veterinary Sciences*, 10(1), 62.522 <https://doi.org/10.3390/vetsci10010062>

523

524 Forman-Hoffman, V. L., Batts, K. R., Hedden, S. L., Spagnola, K., & Bose, J. (2018). Comorbid
525 mental disorders among adults in the mental health surveillance survey. *Annals of*
526 *Epidemiology*, 28(7), 468-474. <https://doi.org/10.1016/j.annepidem.2018.03.002>
527

528 Gravrok, J., Howell, T., Bendrups, D., & Bennett, P. (2019). Thriving through relationships:
529 assistance dogs' and companion dogs' perceived ability to contribute to thriving in individuals
530 with and without a disability. *Disability and Rehabilitation: Assistive Technology*, 15(1), 45–53.
531 <https://doi.org/10.1080/17483107.2018.1513574>
532

533 Griffioen, R. E., van der Steen, S., Verheggen, T., Enders-Slegers, M. J., & Cox, R. (2020).
534 Changes in behavioural synchrony during dog-assisted therapy for children with autism spectrum
535 disorder and children with Down syndrome. *Journal of Applied Research in Intellectual*
536 *Disabilities*, 33(3), 398-408. <https://doi.org/10.1111/jar.12682>
537

538 Hawkins, N. G., Sanson-Fisher, R. W., Shakeshaft, A., D'Este, C., & Green, L. W. (2007). The
539 multiple baseline design for evaluating population-based research. *American journal of*
540 *preventive medicine*, 33(2), 162-168. <https://doi.org/10.1016/j.amepre.2007.03.020>
541

542 Howes, O. D., Thase, M. E., & Pillinger, T. (2022). Treatment resistance in psychiatry: state of
543 the art and new directions. *Molecular psychiatry*, 27(1), 58–72. <https://doi.org/10.1038/s41380-021-01200-3>
544

545

546 Leighton, S. C., Nieforth, L. O., & O'Haire, M. E. (2022). Assistance dogs for military veterans
547 with PTSD: A systematic review, meta-analysis, and meta-synthesis. *PLoS One*, 17(9),
548 e0274960. <https://doi.org/10.1371/journal.pone.0274960>
549

550 Leighton, S. C., Rodriguez, K. E., Zhuang, R., Jensen, C. L., Miller, E. A., Sabbaghi, A., &
551 O'Haire, M. E. (2024). Psychiatric service dog placements are associated with better daily
552 psychosocial functioning for military veterans with posttraumatic stress disorder. *Psychological*
553 *Trauma: Theory, Research, Practice, and Policy*, 16(Suppl 3), S707–S717.
554 <https://doi.org/10.1037/tra0001543>

555

556 Lloyd, J., Johnston, L., & Lewis, J. (2019). Psychiatric Assistance Dog Use for People Living
557 With Mental Health Disorders. *Frontiers in veterinary science*, 6, 166.
558 <https://doi.org/10.3389/fvets.2019.00166>

559

560 Lynam, D. R., Caspi, A., Moffitt, T. E., Loeber, R., & Stouthamer-Loeber, M. (2007).
561 Longitudinal evidence that psychopathy scores in early adolescence predict adult psychopathy.
562 *Journal of Abnormal Psychology*, 116, 155-165. <https://doi.org/10.1037/0021-843X.116.1.155>

563

564 McGorry, P., & Van Os, J. (2013). Redeeming diagnosis in psychiatry: timing versus specificity.
565 *The Lancet*, 381(9863), 343-345. [https://doi.org/10.1016/S0140-6736\(12\)61268-9](https://doi.org/10.1016/S0140-6736(12)61268-9)

566

567 Nieforth, L. O., Craig, E. A., Behmer, V. A., MacDermid Wadsworth, S., & O'Haire, M. E.
568 (2023). PTSD service dogs foster resilience among veterans and military families. *Current
569 Psychology*, 42(16), 13207-13219. <https://doi.org/10.1007/s12144-021-01990-3>

570

571 O'Haire, M. E., & Rodriguez, K. E. (2018). Preliminary efficacy of service dogs as a
572 complementary treatment for posttraumatic stress disorder in military members and
573 veterans. *Journal of Consulting and Clinical Psychology*, 86(2), 179–
574 188. <https://doi.org/10.1037/ccp0000267>

575

576 Rahman, M. A., Kundu, S., Christopher, E., Ahinkorah, B. O., Okyere, J., Uddin, R., &
577 Mahumud, R. A. (2023). Emerging burdens of adolescent psychosocial health problems: a
578 population-based study of 202 040 adolescents from 68 countries. *BJPsych Open*, 9(6), e188.
579 <https://doi.org/10.1192/bjo.2023.583>

580

581 Rapee, R. M., Bögels, S. M., Van der Sluis, C. M., Craske, M. G., & Ollendick, T. (2012).
582 Annual Research Review: Conceptualising Functional Impairment in Children and Adolescents.
583 *Journal of Child Psychology and Psychiatry*, 53(5), 454-468. [https://doi.org/10.1111/j.1469-7610.2011.02479.x](https://doi.org/10.1111/j.1469-
584 7610.2011.02479.x)

585

586 Ravens-Sieberer, U., Erhart, M., Rajmil, L. et al. (2010). Reliability, construct and criterion
587 validity of the KIDSCREEN-10 score: a short measure for children and adolescents' well-being
588 and health-related quality of life. *Quality of life research*, 19(10), 1487-1500.
589 <https://doi.org/10.1007/s11136-010-9706-5>

590

591 RehaCare. (2021). *Assistance dogs: One key to active participation*. RehaCare. Retrieved on
592 August 27, 2025, from: <https://www.rehacare.com/en/media-news/emag/lifestyle/assistance-dogs-active-participation>

593

594

595 Rodriguez, K. E., Anderson, L. M., Ott, C. A., & O'Haire, M. E. (2021). The effect of a PTSD
596 service dog on military veterans' medication regimens: a cross-sectional pilot
597 study. *Anthrozoös*, 34(3), 393-406. <https://doi.org/10.1080/08927936.2021.1898219>

598

599 Rodriguez, K. E., LaFollette, M. R., Hediger, K., Ogata, N., & O'Haire, M. E. (2020). Defining
600 the PTSD service dog intervention: Perceived importance, usage, and symptom specificity of
601 psychiatric service dogs for military veterans. *Frontiers in psychology*, 11, 519718.
602 <https://doi.org/10.3389/fpsyg.2020.01638>

603

604 Shiffman, S., Stone, A. A., & Hufford, M. R. (2008). Ecological momentary assessment. *Annual
605 Review of Clinical Psychology*, 4(1), 1-32.
606 <https://doi.org/10.1146/annurev.clinpsy.3.022806.091415>

607

608 Tedeschi, P., Fine, A. H., & Helgeson, J. I. (2010). Assistance animals: Their evolving role in
609 psychiatric service applications. In *Handbook on Animal-Assisted Therapy* (pp. 421-438).
610 Academic Press.

611

612 Terhakopian, A., Sinaii, N., Engel, C. C., Schnurr, P. P., & Hoge, C. W. (2008). Estimating
613 population prevalence of posttraumatic stress disorder: an example using the PTSD
614 checklist. *Journal of Traumatic Stress: Official Publication of The International Society for
615 Traumatic Stress Studies*, 21(3), 290-300. <https://doi.org/10.1002/jts.20341>

616

617 Van der Helm, P. (2025, January 13). *Kortzichtige gemeenten weigeren psychosociale hulphond*
618 *te financieren* [Short-sighted municipalities refuse to fund psychiatric assistance dogs]. Sociale
619 Vraagstukken. [https://www.socialevraagstukken.nl/kortzichtige-gemeenten-weigeren-](https://www.socialevraagstukken.nl/kortzichtige-gemeenten-weigeren-psychosociale-hulphond-te-financieren/)
620 [psychosociale-hulphond-te-financieren/](https://www.socialevraagstukken.nl/kortzichtige-gemeenten-weigeren-psychosociale-hulphond-te-financieren/)

621

622 Van Der Steen, S., Kamphorst, E., & Griffioen, R. E. (2025). A randomized controlled trial of
623 the effects of dog-assisted versus robot dog-assisted therapy for children with autism or Down
624 syndrome. *PloS one*, 20(3), e0319939. <https://doi.org/10.1371/journal.pone.0319939>

625

626 Van der Steen, S., IJpema, M., Mahmoud, G., Born, A., & van der Meel, R. (2024).
627 *Psychiatrische assistentiehonden: Met een hond kan ik het leven aan* [Psychiatric assistance
628 dogs: With a dog, I can face life]. <https://psychiatrischeassistentiehonden.nl/>

629

630 Van Houtert, E. A., Rodenburg, T. B., Vermetten, E., & Endenburg, N. (2022). The impact of
631 service dogs on military veterans and (ex) first aid responders with post-traumatic stress
632 disorder. *Frontiers in psychiatry*, 13, 834291. <https://doi.org/10.3389/fpsyg.2022.834291>

633

634 Vincent, C., Dumont, F., Gagnon, D. H., Belleville, G., Auger, E., Lavoie, V., ... & Bernier-
635 Banville, É. (2019). Psychiatric service dog outcomes for veterans with posttraumatic stress
636 disorder over an 18 month-period: A pilot study. *Journal of Neurology and Psychiatric*
637 *Disorders*, 1 (1): 110.

638 **Table 1:** Final participant characteristics for the three studies
 639

	Statistic	Category	Number of participants, or amount of time
Study 1 Questionnaire	Age (years)	16 - 18	18
		19 - 21	32
		22 - 26	66
		27 - 30	25
	Self-identified gender	Male	7
		Woman	126
		Non-binary	6
		Other	2
	Status of dog training process	In training, lives with client	75
		Done training, lives with client	66
Study 2 Within-subjects	Time spent living together (in months)	Clients with dog in training	12
		Clients with dogs completed training	45
	Age (years)	16 - 18	1
		19 - 21	1
		22 - 26	4
		27 - 30	3
	Self-identified gender	Man	1
		Woman	8
	Status of dog acquisition and training process <i>at first measurement</i>	In training, lives with client < 6 months	7
		In training, does not live with client yet	1
		Completed training, lives with client	1
	Type of training	Team training	7
		Trained by organization	2

Time spent in training or together (in months)	Dog in training, lives with client	3.5 (<i>training</i>)
	Dog in training, does not live with client	18 (<i>training</i>)
	Dog finished training and lives with client	2 (<i>together</i>)
Study 3 Interviews		
Age (years)	16 - 18	1
	19 - 21	3
	22 - 26	7
	27 - 30	2
Self-identified gender	Man	3
	Woman	10
Status of dog training process	Dog in training, lives with client	7
	Dog completed training, lives with client	6
Type of training	Team training	11
	Trained by organization	1
	Both	1
Time living together (in months)	Dog in training	11
	Dog finished training	47

640

641

642

643

644 **Table 2:** Quality of Life Questions asked in Study 1 and Study 2.

645

Question	Difference with original Dutch KIDSCREEN
Have you felt fit and healthy?	N/A
Have you felt full of energy?	N/A
Have you felt sad?	N/A
Have you had enough time for yourself?	N/A
Have you felt lonely?	N/A
Have you been able to do the things you wanted in your free time?	N/A
Have you had fun with others?	Original item used 'friends' instead of 'others'.
Have you been able to concentrate well (pay attention)?	Original item used only 'pay attention'.
Have you participated in outside-the-home activities like studying, working, attending day programs, or visiting shops?	Original school-related item replaced to suit entire sample.

646 **Note.** In Study 1, participants reported on the past month, while in Study 2 they reported on the past two weeks. The
 647 original KIDSCREEN scale also included the item "Have your parents treated you fairly?", which was omitted
 648 because it seemed less suitable for our older target group.

649

650

651 **Table 3:** Interview Sections and Example Questions

652

Question category	Example questions
Introductory	<ul style="list-style-type: none"> - Could you tell us a bit about yourself and your (future) assistance dog? - What made you choose an assistance dog rather than a regular pet dog?
Training	<ul style="list-style-type: none"> - You chose a pre-trained assistance dog / to train your assistance dog in team training. Could you tell us why you made this choice? - Your assistance dog is / will be trained by organization [name]. Why did you choose this organization?
Funding	<ul style="list-style-type: none"> - Could you describe how the funding process proceeded / is proceeding? What steps did you take? - Could you describe how the funding process feels / felt for you?
Living and working together	<ul style="list-style-type: none"> - How have you been since your assistance dog became part of your life? - How would you describe the bond between you and your dog?

653

654

655

656 **Figure 1:** Visual representation of codes and subcodes.

657

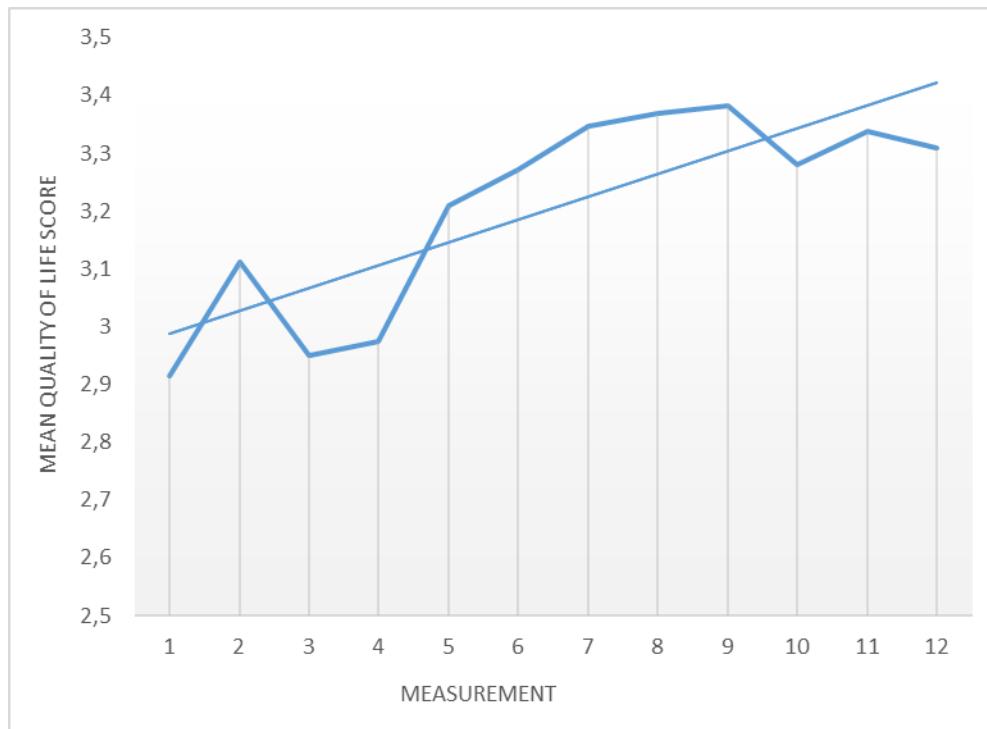


658

659

660 **Figure 2: Group Mean Quality of Life per time point.**

661



662

663 Note. KIDSCREEN quality-of-life scores can range from 1 (lowest) to 5 (highest). In our
664 sample, mean scores increased from 2.9 at the first measurement to 3.3 at the twelfth
665 measurement.

666

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674 **Appendix A**
 675 **Codebook**
 676

677 **Decision rules regarding ambiguous quotes:**

678 - When a quote is on the edge between two main categories, the question that the quote
 679 was a response to is leading in the coding decision (example: is it a very broad and
 680 general question, or does the question inquire directly into the person's bond with their
 681 assistance dog?)

682 - If a quote is still ambiguous after the above consideration, the 'end result' or the
 683 ultimately resulting life change after acquiring the assistance dog is what gets coded
 684 (example: person 1 reflects upon themselves internally as a result of the dog's mirroring;
 685 person 12 merely mentions their external response towards their dog).

686

Intvw. nr.	Quote	Main category	Subcategory	Pos/ neg change
1	"After some time of him barking at random people, I noticed that it isn't him, but I think it is actually me being the one that has an issue"	Psychological functioning	Self-image (self-awareness)	+
12	"Nou ten minste dan zit ik te veel in mijn hoofd en dan gaat hij natuurlijk spiegelen, waardoor ik soms wel geïrriteerd naar hem reageer" // <i>"Well at least then I get in my head too much and then obviously he mirrors me, which sometimes makes me respond with annoyance"</i>	Dog-owner relationship	Connection (mirroring)	+ / -

687

688 Main categories (preferably 1, maximum 2 per quote):

689 - **Psychological functioning**

690 - Quotes that involve discussion about the internal experience of the person - cognitive or emotional - in which they refer to a specific emotion, state of mind, or use the words 'emotions/ emotional'

691

692

693 - *Exception*: emotional or other psychological experiences that are in direct relation
694 to the world around the person and have a more external link, these are part of
695 ‘social functioning’

696 - **Social functioning**

697 - Quotes in which an interaction between the person and the world around them are
698 discussed - direct and outward interactions, but also more indirect and internal
699 experiences that have a direct relation to the outside world

700 - Quotes discussing a form of participation in society, in which a form of active
701 citizenship can be seen

702 - **Physical functioning**

703 - Quotes that involve terms that relate directly to physical health and physical
704 activity, such as sleep, daily routines, staying active, and getting outside more

705 - *Clarification*: ‘getting outside more’ is only applicable when the outcome is
706 simply getting some fresh air; when the person gets outside with the goal or result
707 of participating in society, this is coded as ‘social functioning’

708 - **Dog-owner relationship**

709 - Quotes that predominantly discuss the interactions between the assistance dog and
710 its owner, be it more generally or more specific with (an) example(s)

711 - Quotes that might involve some discussion relating to other main categories, but
712 would be done more justice in the ‘dog-owner relationship’ category for the
713 reason that it highlights the unique experiences of this type of assistance

714 - **General functioning**

715 - Quotes that are relevant to the quality of life of the assistance dog owners in the
716 past or present, but that are too broad to fit into any of the above categories or are
717 otherwise not relevant to the categories and are ‘leftover’

718 - *Exception*: quotes that specifically discuss an expected difference in quality of life
719 in the future - these are a part of ‘psychological functioning → ‘hope’

720

721 Subcategories psychological functioning:

722 - **Self-image**

723 - Quotes in which the person discusses changes in how they view themselves
724 compared to the time before they had their assistance dog
725 - Examples: self-worth, self-confidence, self-awareness
726 - **Hope**
727 - Quotes discussing feelings of hope, or finding a more comfortable and nicer way
728 to live life compared to how things were before the assistance dog came into the
729 person's life
730 - Examples: general sense of hope, vision of the future, finding a will to live
731 - **Stress**
732 - Quotes referring to any change in emotional/ mental stress that is not directly
733 related to the handling of the assistance dog (this would be part of 'dog-owner
734 relationship')
735 - Examples: amount of general stress moments, duration of general stress moments,
736 dissociation or flashbacks, overstimulation, decision paralysis, pressure to be
737 'better'
738 - **General**
739 - Quotes referring to an aspect of psychological functioning that is not a part of the
740 above subcategories
741 - Examples: experiences of joy, stopped psychological treatment / taking
742 medication, stability
743
744 Subcategories social functioning
745 - **Social participation**
746 - Quotes pertaining to a change in independence or mobility after the assistance dog
747 came into the person's life
748 - Examples: going to school/ work, living situation, general independence
749 - **Grounding**
750 - Quotes in which the person talks about finding a sense of rest, calmth, or inner
751 peace (physical and/ or psychological) in environments with other people as a
752 result of being accompanied by their assistance dog
753 - Examples: general, sense of safety, 'shield' created by dog

754 - **Relations to other people**

755 - Quotes discussing a change in the amount or the quality of interactions that the

756 person has in their interactions with other people since they acquired their

757 assistance dog

758 - Examples: with familiar people, with unfamiliar people

759

760 Subcategories physical functioning:

761 - **Daily routine**

762 - Quotes applying to the creating or maintaining of a daily routine as a result of

763 owning and caring for the assistance dog

764 - Quotes in which changes to the start of one's day where the person has to get up

765 out of bed due to owning and caring for an assistance dog are discussed

766 - **Sleep**

767 - Quotes relating to the changes in the person's rest (at night) are discussed, which

768 may have to do with general sleeping comfort, a sense of safety, or dog assistance

769 during & after nightmares

770 - *Clarification*: despite the fact that one might reason that 'nightmares' are a part of

771 psychological functioning, we choose to see it as a part of 'getting a good night's

772 sleep' in that bad sleep quality affects one physically

773 - **Physical activity**

774 - Quotes that discuss a change in the amount of physical activity that the person

775 engages in as a result of owning an assistance dog

776 - **Getting outside**

777 - Quotes referring to getting out of the house more often or 'getting some fresh air',

778 with the focus on simply being outdoors

779 - *Exception*: quotes that involve going outside, but that put the focus on the

780 physical activity/ sport elements of this (physical functioning → physical

781 activity), or that put the focus on active participation in society (social

782 functioning)

783

784 Subcategories dog-owner relationship:

785 - **Connection**

786 - Quotes in which the bond that the person has with their assistance dog is the
787 central theme, for example the ideas of 'having a buddy', 'being in tune with one
788 another', interdependency, mirroring as a task, or the sense of trust

789 - **Fun**

790 - Quotes specifically referring to the fun and joyful moments that the person has
791 with their assistance dog, be it during or outside of the dog's working hours

792 - **Stress**

793 - Quotes in which a change in stress levels in relation to the assistance dog is
794 expressed; for example in training/ financing, dog temperament, the changing
795 nature of human-animal interactions, or (anticipatory) grief

796

797 Subcategories general functioning:

798 - **Short-term**

799 - Quotes that apply to the training period of the assistance dog

800 - Quotes that apply to the period after the acquisition of the assistance dog, in
801 which the person's life is changing actively and considerably

802 - **Long-term**

803 - Quotes that apply to life with the assistance dog after the person has gotten used
804 to this way of life

805

806 Positive/ negative change evaluation:

807 - +

808 - Quotes in which a positive change in the person's life as a result of the assistance
809 dog is described

810 - -

811 - Quotes in which a negative change in the person's life as a result of the assistance
812 dog is described

813 - Quotes in which the heavy dependence on the assistance dog is emphasized in a
814 way that conveys the negative side of this interdependency

815 - + / -

816 - Quotes discussing an influence of the assistance dog on the person's life that is
817 neither positive nor negative per se, but rather more neutral
818 - Quotes that involve both a positive and negative influence of the assistance dog
819 on the person's life, in which these influences have little to no meaning if they
820 were separated into two quotes