SUPPLEMENTARY MATERIAL

Health-related quality of life and marine-related health risks in coastal communities of Palawan, Philippines

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METHODS

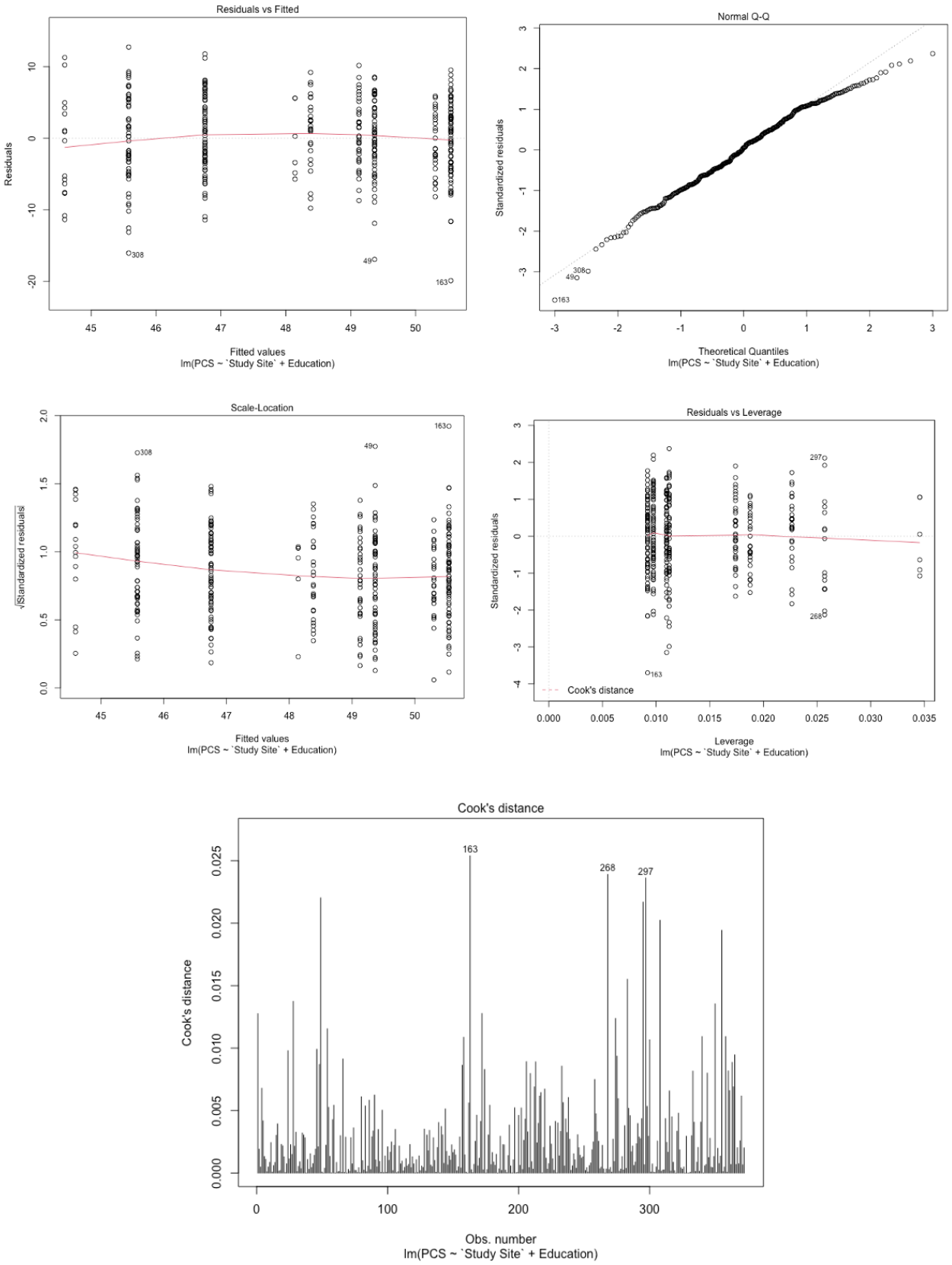
Exploratory factor analyses and Regression model diagnostics

The suitability of the item sets for exploratory factor analysis (EFA) was initially assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity (Kaiser 1974; Bartlett 1951). The overall KMO value was 0.92 for both item sets, while Bartlett's tests were statistically significant (S4Q5: χ^2 = 14,068.20; $p < 0.05$), indicating that the correlation matrices were suitable for further examination (Supplementary Tables 1). The initial factor-retention assessment considered the Kaiser eigenvalue-greater-than-one criterion, Cattell's scree test, and parallel analysis (Hayton et al. 2004). Oblimin rotation was applied because it permits correlations among extracted factors (Browne 2001; Revelle and Condon 2019).

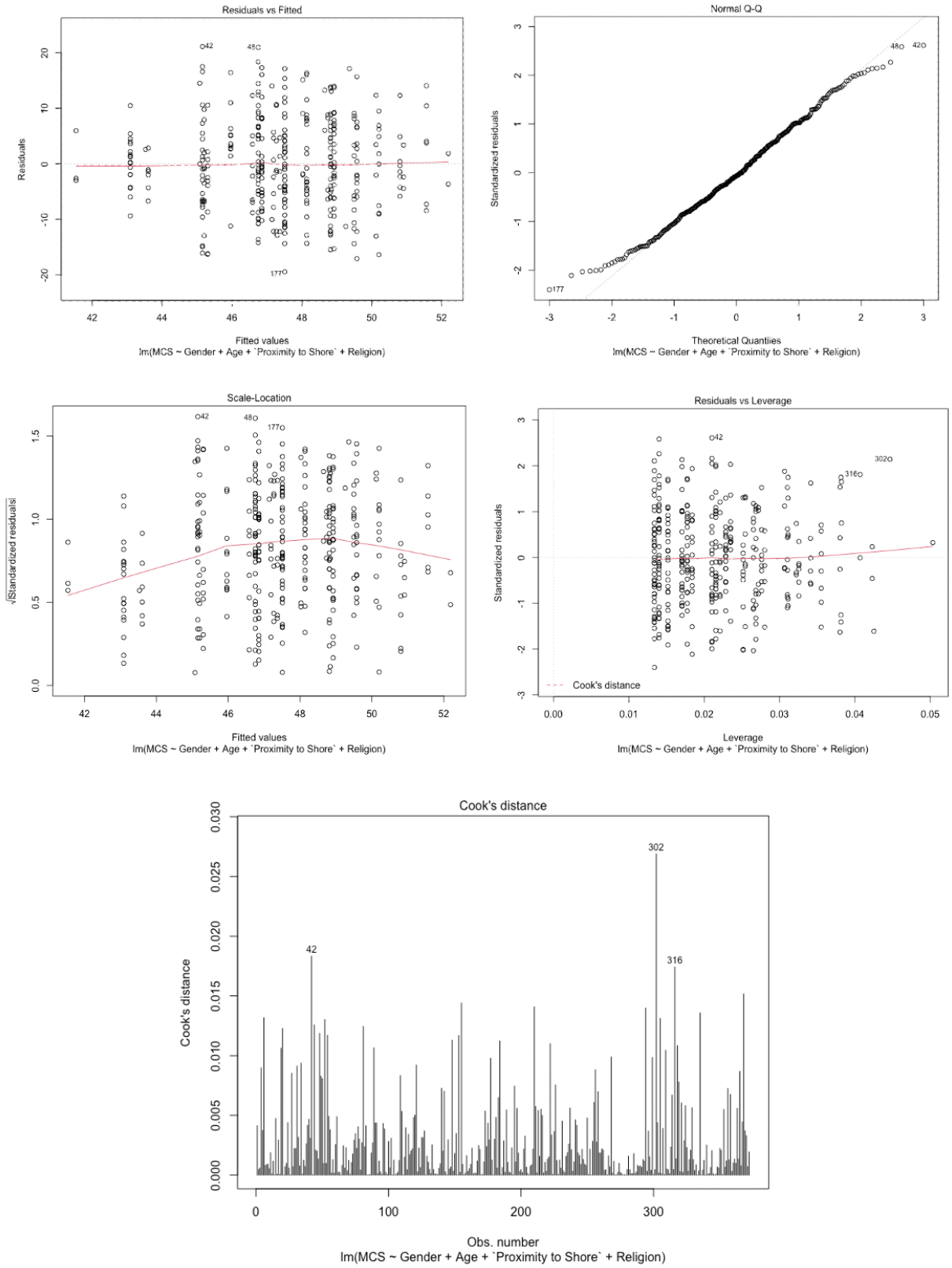
Supplementary Table 1. Factor loadings and reliability in the EFA with oblimin rotation for survey questionnaire, Question 5 under Section 4 (S4Q5). Factor correlation: Directly marine related ↔ Infection & Skin diseases r = 0.830; Directly marine related ↔ Muscle aches r = 0.293; Muscle aches ↔ Infection & Skin diseases r = 0.569; Shapiro-Wilk test of normality p-value > 0.05; Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (MSA) = 0.92; Bartlett's test of sphericity χ^2 =14068.2, p-value < 0.05.

Factor	Item	Factor Loading (FL)			KMO	Communality	Cronbach's alpha (Cut off > 0.7)
		FL1	FL2	FL3			
Directly marine related	S4Q5a	0.005	0.992	0.008	0.95	0.989	0.929
	S4Q5b	0.001	0.771	0.005	0.99	0.592	
	S4Q5c	0.011	0.987	0.007	0.91	0.987	
	S4Q5d	-0.004	0.775	0.007	0.97	0.633	
	S4Q5e	0.010	0.988	0.006	0.90	0.988	
Muscle aches	S4Q5h	-0.002	0.006	0.992	0.78	0.987	0.949
	S4Q5i	0.112	0.148	0.499	0.94	0.461	
	S4Q5j	-0.002	0.006	0.997	0.78	0.989	
Infection & Skin diseases	S4Q5g	0.774	-0.136	0.158	0.98	0.584	0.844
	S4Q5k	0.977	0.040	-0.022	0.91	0.999	
	S4Q5l	0.978	0.040	-0.023	0.94	1.001	
	S4Q5m	0.974	0.042	-0.018	0.94	0.999	
	S4Q5n	0.581	-0.101	0.116	0.99	0.319	
	S4Q5o	0.822	0.015	-0.032	1.00	0.664	

The assumptions of the final physical component summary (PCS-12) and mental component summary (MCS-12) regression models were assessed using diagnostic plots. These included residuals versus fitted values, normal Q–Q plots, scale-location plots, residuals versus leverage plots, and Cook's distance plots (Supplementary Figures 1-2)



Supplementary Figure 1. Model diagnostic plots for PCS-12 model: Residual versus Fitted Plot for normality of the data; Normal Quantile-Quantile Plot for normality of the residuals; Scale-Location Plot for homoscedasticity of the residuals; Residuals versus Leverage Plot for influential cases; and Cook's Distance Plot to visualize the high leverage points.



Supplementary Figure 2. Model diagnostic plots for MCS-12 model: Residual versus Fitted Plot for normality of the data; Normal Quantile-Quantile Plot for normality of the residuals; Scale-Location Plot for homoscedasticity of the residuals; Residuals versus Leverage Plot for influential cases; and Cook's Distance Plot to visualize the high leverage points.

RESULTS

Self-reported accidents and health experiences

Most participants reported no occurrence of the health experiences listed in Section 4, Question 5 (S4Q5). Among the reported experiences, other muscular or body pain (45.39%) and fever or headache (40.65%) were the most frequently reported without consultation with a health worker. Cuts, stings, or bites from something in or near the water were reported by 22.69% of participants, while 17.46% reported urinary tract infections accompanied by consultation with a health worker (Supplementary Table 2).

Supplementary Table 2. Item descriptions, mean scores, standard deviations, and response frequencies for self-reported marine-related health experiences (Section 4, Question 5; S4Q5; N = 401). Note: Values are presented as mean ± standard deviation or number (valid percentage). Response codes: 1 = No; 2 = Yes, but did not talk to a health worker; 3 = Yes, and talked to a health worker; 99 = Don't know/prefer not to answer.

Marine-related health experiences (S4Q5)	Mean ± SD	1 n (%)	2 n (%)	3 n (%)	99 n (%)
Directly marine-related accidents	**1.12 ± 0.35**				
Got cut, stung, or bitten by something in or near the water (S4Q5a)	1.28 ± 0.53	295 (73.57)	91 (22.69)	12 (2.99)	3 (0.75)
Picked up a parasite from the sand or water (S4Q5b)	1.01 ± 0.19	386 (96.26)	10 (2.49)	—	5 (1.25)
Experienced difficulties in the water or came close to drowning (S4Q5c)	1.07 ± 0.30	369 (92.02)	27 (6.73)	2 (0.50)	3 (0.75)
Experienced diving-related problems (e.g., decompression sickness or the bends) (S4Q5d)	1.10 ± 0.37	355 (88.53)	37 (9.23)	4 (1.00)	5 (1.25)
Experienced sunburn or sunstroke at the sea or beach (S4Q5e)	1.15 ± 0.38	337 (84.04)	60 (14.96)	1 (0.75)*	3 (0.75)
Muscle aches	**1.46 ± 0.59**				
Experienced fever or headache (S4Q5h)	1.58 ± 0.66	199 (49.63)	163 (40.65)	36 (8.98)	3 (0.75)
Experienced cramps in the legs or other areas (S4Q5i)	1.26 ± 0.51	285 (71.07)	103 (25.69)	5 (1.25)	8 (2.00)
Experienced other muscular or body pains (S4Q5j)	1.53 ± 0.59	199 (49.63)	182 (45.39)	17 (4.24)	3 (0.75)
Infections and skin diseases	**1.28 ± 0.56**				
Experienced vomiting, diarrhoea, or stomach ache (S4Q5g)	1.41 ± 0.66	263 (65.59)	99 (24.69)	35 (8.73)	4 (1.00)
Experienced earache or discharge from the ears (S4Q5k)	1.12 ± 0.42	357 (89.03)	29 (7.23)	11 (2.74)	4 (1.00)
Experienced red, painful eyes or discharge from the eyes (S4Q5l)	1.22 ± 0.49	313 (78.05)	74 (18.45)	10 (2.49)	4 (1.00)
Experienced a new skin problem (e.g., itching or an allergic reaction) (S4Q5m)	1.18 ± 0.50	335 (83.54)	46 (11.47)	16 (3.99)	4 (1.00)
Experienced a urinary tract infection (S4Q5n)	1.61 ± 0.79	214 (53.37)	110 (27.43)	70 (17.46)	7 (1.75)
Experienced breathing difficulties or infection (S4Q5o)	1.16 ± 0.51	345 (86.03)	30 (7.48)	20 (4.99)	6 (1.50)

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