

# Experience: the most critical factor in choosing after-hours medical care

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## ABSTRACT

**Introduction** In many countries, a reassessment of after-hours primary care has become necessary. In particular, centralised general practitioner deputizing services (GPDS) have emerged. In this study, consumers' preferences for after-hours medical care were obtained and the use of the new GPDS was predicted.

**Method** On the basis of the Theory of Reasoned Action, a survey was developed that was used at the Free Newborn and Child health care services in Antwerp. Consumers were asked about their knowledge, experience and perceptions concerning the performance of different medical services.

**Results** 350 questionnaires were used for analysis. 98.6% of the respondents knew about the existence of the emergency department, whereas the GPDS was known by 81.7% of the respondents. The main reasons for preferring emergency department over the other services were an easy access, good explanation by the doctor and a late due time of the payment. Respondents preferred the GPDS mainly because of an expected shorter waiting time. Experience had a strong positive influence on choosing a particular after-hours medical service.

**Conclusion** In our study, the consumers' preferences concerning after-hours medical care were assessed. The following items are crucial for choosing after-hours care: experience with the services, easy access to the service, explanation by the doctor about the illness and the treatment and waiting time.

An overhaul of after-hours primary care has become necessary in many countries. In the future the availability of primary care will decrease due to an overall decreasing number of general practitioners (GPs), feminisation of the profession, working part-time and a decrease of young doctors choosing general practice.<sup>1–7</sup> The overall result is an increasing workload for GPs. The concept of individual or small groups of GPs offering 24-h care is no longer feasible.

Moreover, the increase of the workload of emergency departments (EDs) is remarkable. EDs show many characteristics of a primary care service, and people visit the ED with problems that can be solved by a GP. Inappropriate use of the ED may distract this service from real medical urgencies.<sup>8–10</sup>

In some countries there is a tendency to centralise after-hours services of GPs. The concept of large-scale general practitioner deputizing services (GPDS) is almost uniformly used in The Netherlands,<sup>11</sup> Denmark,<sup>12</sup> 13 Norway<sup>14</sup> and in the UK.<sup>15–17</sup> Concerns have been raised as to whether large-scale GPDS would lead to equally good patient care as the former small-scale model.<sup>18</sup> It is of particular interest if there is free access to all the

medical services and if the primary care can be easily bypassed. Large-scale GPDS, when less appreciated by the patient, could lead to extra transfers of patients from general practice to secondary care alternatives, such as the ED.

In Belgium, with a free access to ED and most medical specialities, GPDS have emerged. In this article, we analyse consumers' experiences with the available services, the importance of service attributes, their perceived performance and the intention to choose after-hours primary care in an urban area. Furthermore, using the model of the Theory of Reasoned Action (TRA), we make an assessment of preferences of consumers among the available services.<sup>19</sup>

## ELICITING CONSUMERS' PREFERENCES

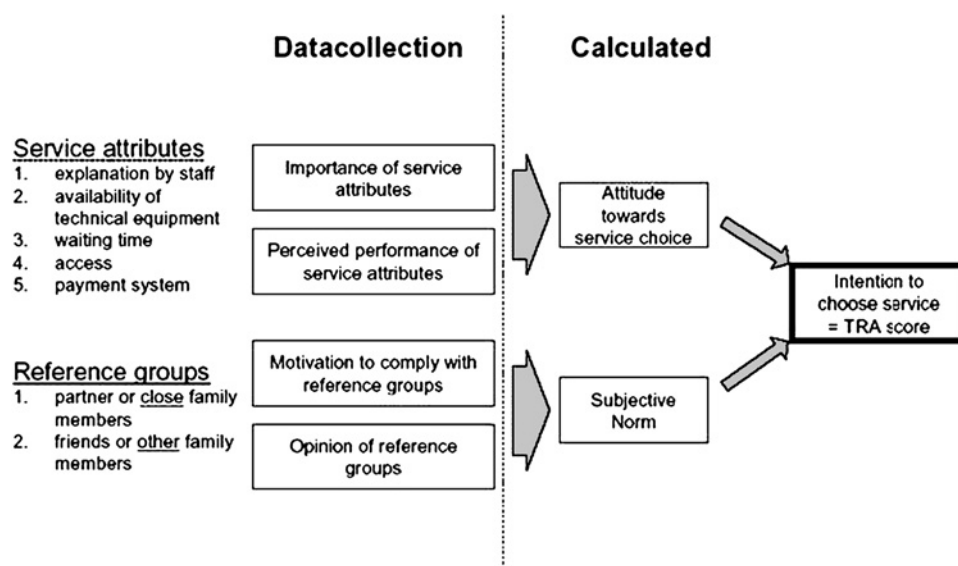
Eliciting consumers' preferences of medical care is difficult but may be studied using marketing techniques. In particular, the TRA is well suited to give insights into consumer behaviour.<sup>19–24</sup> Hereby, the decision to adopt a particular kind of behaviour (intention to choose a service) depends on a person's behavioural belief (specific attitude towards that choice) and his or her normative beliefs (subjective norm or how reference groups would advise to act).

Using this theory, we identified seven items based on a review of literature and verified them with (1) GPs, (2) academic researchers and (3) patients; five related to the attitude and two related to the subjective norm, which steer behavioural intention (figure 1).<sup>25–28</sup>

According to TRA the attitude towards the intention to choose a service is influenced by the importance of the five service attributes and the people's perceived performance of the different medical services concerning these five service attributes. The perceived performance depends partially on knowledge and previous usage of the services. On the other hand, the opinion of the spouse (or close family members) and of friends (or other family members) will explain the subjective norm. This subjective norm is also influenced by the motivation to comply with both reference groups (figure 1). In our model, attitude towards the choice and the subjective norm have a quantifiable impact on the behaviour concerning decisions of consumers seeking medical care. Importance, perceived performance, motivation to comply and opinion of reference groups were scored by the respondents on a seven-point Likert scale.

We predict the service choice based on the "importance" and the "perceived performance" of the service attributes, as well as on "the motivation to comply with the reference groups" and the "opinion of the reference groups" using the formula in figure 2.

**Figure 1** Survey items adapted to the TRA by Aizen and Fishbein.<sup>22</sup> TRA, Theory of Reasoned Action.



## METHOD

### Context and sampling

The study was performed from February to June 2006 in a large city in Belgium (Antwerp). In this urban area, the country's first large-scale GPDS started in June 2003; patients may visit the

GPDS, request this service for a home visit (GPHV), and visit the ED or a paediatrician in the case of a child involved (PD). Patients have free access to all services.

As in all European cities, large foreign communities exist, and in Antwerp, the non-Belgian community represents 25.3% of the

**Figure 2** TRA formula to compute behavioural intention. TRA, Theory of Reasoned Action.

$$BI_{Service,r} = A_{Service,r} + SN_{Service,r}$$

Where:

$$A_{Service,r} = \sum_{i=1}^5 ImpAtt_{i,r} PerfAtt_{i,Service,r}$$

and

$$SN_{Service,r} = \sum_{i=1}^5 OpiRefGroup_{i,r} ComRefGroup_{i,Service,r}$$

$BI_{Service,r}$ : behavioural Intention to choose service (=TRA score)

$A_{Service,r}$ : attitude towards service choice of an individual respondent

$SN_{Service,r}$ : subjective norm related to service choice of an individual respondent

$r$ : individual respondents

$ImpAtt_{i,r}$ : importance of the attribute

$PerfAtt_{i,Service,r}$ : perceived performance of the attribute for a specific service

$i$ : specific attitude, from 1 to 5

$ComRefGroup_{i,Service,r}$ : motivation to comply with reference groups

$OpiRefGroup_{i,r}$ : opinion of reference groups

$j$ : specific normative belief, from 1 to 2

Calculation of the TRA score out of the *importance* of service attributes and the *perceived performance* of the service attributes (attitude towards service choice) in combination with the *motivation to comply* with reference groups and the *opinion* of reference groups (subjective norm). The number of items for attitudes (5) and the subjective norms (2) reflect their relative contribution to the overall score.

We would like to know your opinion about the following statements. On this page all the statements are related to the emergency department of the hospital.  
Check the box that corresponds most with your opinion.

	fully agree	rather agree	slightly agree	neutral don't know	slightly disagree	rather disagree	fully disagree
At the emergency department of the hospital the required examinations can be done quickly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At the emergency department of the hospital the technical equipment (for medical photos, blood tests, etc) is quickly available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The emergency department of the hospital is easy to reach.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At the emergency department of the hospital I will not have to pay immediately.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My partner (or some other relative) will decide to call on the emergency department for this kind of emergency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends and family will not support the use of the emergency department of the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For an appointment at the emergency department of the hospital I will have to wait long.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The doctor at the emergency department of the hospital will give me a clear explanation about my health problem and the therapy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Figure 3** Example of seven items asking for the *perceived performance* and *opinions of the reference groups*, in this example, concerning the emergency department.

entire population in 2006. To minimise selection bias, our aim was to cover the broad range of nationalities in this region. We therefore approached all consumers at the Free Newborn and Child health care service (FNC service) in Antwerp. In 2005 this service covered 97% of the entire newborn population in the city.<sup>29</sup> Although we only reach a specific part of the population (respondents with young children), we know that these people frequently use out-of-hours care.<sup>30</sup>

### Instrument

Because people may take other decisions in choosing medical services when children are involved, we developed a questionnaire based on two scenarios: the “adult” scenario (“You have a visit on a Saturday night from a friend or relative who will stay the night at your home. During the night, the visitor wakes up and feels unwell, in which case you decide to look for medical assistance”), and the “child” scenario (“It is Sunday morning. Your three-year-old child has a fever. You already gave him a medicine to lower the fever. It helped but the fever is coming back. So you decide to look for medical assistance”).<sup>27</sup> Respondents were allocated alternating to either one scenario. The questionnaire was developed and piloted in three different languages (Dutch, English and Arabic), of which the consistency was checked by means of backward-translation. The questionnaire was administered between February and June 2006. All visitors of the FNC service were requested to participate. Trained interviewers offered the parents a questionnaire that had to be filled out on a laptop and, if needed, extra assistance was offered.

First, the survey asked in four items for *experience* (knowledge and usage) with after-hours services. Respondents had to score “never heard of”, “never used”, “used once” and “used several times” for each of the different after-hours services offered: ED, GPDS, GPHV and PD.

Second, the participants were asked to evaluate the *importance of the attributes* and the *motivation to comply* with reference groups on a seven-point scale (from “1 unimportant” to “7 important” at the extremes).

The third part checked the respondents’ opinion about seven items concerning each type of service included. The answers were rated on a seven-point scale (7, “fully agree”; 6, “rather agree”; 5, “slightly agree”; 4, “neutral/don’t know”; 3, “slightly disagree”; 2, “rather disagree”; 1, “fully disagree”), measuring the *perceived performance of service attributes* and *opinions of the reference groups*. In figure 3 an example of this part of the questionnaire is given.

Finally, the respondents answered 19 questions concerning their sociodemographic status.

### Analysis

Data were analysed using SPSS V.13.0. Descriptive statistics of the sociodemographic data of our sample and knowledge and use of the different services were calculated. Means, SD and 95% confidence interval were used for quantitative variables, frequencies and percentages for categorical variables. We applied one-way analysis of variance (ANOVA) with the adequate post hoc comparison (Dunnnett C for equal error variances and Tukey honest significant difference test for non-equal error variances of the service attribute evaluation) to investigate the means of the perceived performance of the services. The  $\chi^2$  test for contingency tables was used for comparing proportions. Statistical significance of results is reported as p values.

Following the TRA approach, we computed the respondents’ individual TRA score per service and identified the service choice based on the highest TRA score. This was considered the first choice. The accumulation of the first choices over all respondents resulted in the *preference shares* for ED, GPDS, GPHV and PD. Similar to market shares, it illustrates in percentages the shares of

**Table 1** Sample size, questionnaire language and sociodemographics over both scenarios

	Adult scenario		Child scenario	
Dutch	165		159	
English	16		6	
Arabic	3		1	
Sum	184		166	
Mean age (SD)	31 y (5.94)		31 y (6.03)	
Married or living together with one child	42.93%		51.81%	
Married or living together with two or more children	45.11%		34.34%	
Single with one child	6.52%		5.42%	
Single with two or more children	2.17%		2.41%	
Other	3.26%		6.02%	
Mean number of family members (SD)	3.60 (1.28)		3.52 (1.12)	
Mean number of children (SD)	1.67 (0.94)		1.65 (1.00)	
Foreign origin	44.02%		44.58%	
Mother	74.46%		68.67%	
Father	20.11%		22.89%	
Others	5.43%		8.44%	
Yes	82.07%		88.55%	
Degree of education	%	Cum%	%	Cum%
No degree or only primary education	5.43	5.43	2.41	2.41
Only lower secondary education	10.33	15.76	10.24	12.65
Higher secondary education	47.83	63.59	41.57	54.22
Higher non-university	17.39	80.98	22.89	77.11
University or post-university	11.41	92.39	17.47	94.58
Don't know	7.61	100	5.42	100
Compulsory health insurance*	95.11%		95.78%	
Total N	350			

\*In Belgium, almost 99% of the population is covered by compulsory health insurance.<sup>31</sup> Data for larger cities can differ from national data because of the presence of refugees, asylum seekers and immigrants.

all patients adopting one of the offered services. Moreover, we checked for the significant differences between TRA scores to estimate the strength of the service preference.

To explain the reasons for the first choice, a multigroup discriminant analysis was also applied. The dependent variable was the chosen service, whereas experience and sociodemographic items were the explanatory ones. Moreover, a regression analysis estimated what determines the differences between services. The sociodemographics and the experience items as well as the perceived performance of service attributes and the opinions of the reference groups were used to predict the differences between the services.

## RESULTS

### Sociodemographics of the sample

Data were collected at three FNC services. Non-participation (49.6% of all visitors) was mainly due to language problems or no interest to participate.

Three hundred and fifty questionnaires were used for analysis. The distribution of scenarios was 52.6% adult scenario and 47.4% child scenario (table 1).

### Experience

The experience in terms of knowledge ("never heard of") and use ("never used", "used once" and "used several times") did vary across the services. The GPDS was not known by 18.3% of the 350 respondents, whereas only 1.4% never heard of the ED. During the past 12 months, 62.3% of the respondents used the ED at least once. Of all respondents, 34.9% already used the GPDS at least once. Overall, the lack of experience is higher for

the GPDS and the GPHV than for the other two services. The experience with the paediatrician is highest among all services, especially the repeated use (figure 4).

The experience varied significantly in between the adult and the child scenario for the ED (independent-samples t test  $p=0.002$ ) and GPHV ( $p=0.018$ ) but not for the GPDS ( $p=0.216$ ). The PD was only available in the child scenario. Because of the mixed results and different choice options, in the following sections, each scenario is analysed separately and interpretation of the results synthesised.

### TRA: behavioural intention to choose a service, based on attitudes and the subjective norm

In both scenarios, people were asked to rate *importance* and *perceived performance* for their attitude concerning medical after-hours care of different services on a seven-point scale, as well as *motivation to comply with reference groups* and *opinion of reference groups* (figure 1).

### Importance of service attributes

The results are similar for both the adult and the child scenario. The most important factor for assessing a service is "the explanation given by the doctor about the disease and its treatment". The variables "technical examination", "waiting time" and "access to the service" can be grouped as second most important because the difference in their average importance rating is not significant (mean score between 6.23 and 6.33 for the adult scenario and between 6.15 and 6.31 for the child scenario). The least important factor is "immediate payment or payment afterwards" (table 2).

### Perceived performance of service attributes

#### Both scenarios

In general, the ED is more appreciated than the GPDS in terms of "explanation", "access", "immediate technical examination" and "payment". On the other hand, people perceive the GPDS better considering "waiting time". The GPDS is considered better than the paediatrician and the home visit in "payment" and "waiting time". Consumers expect better explanation during a consultation at the ED. In addition, the paediatrician is expected to give better explanation. Both services are also superior to GPDS and GPHV in a prompt examination because of the availability of technical equipment.

#### Adult scenario

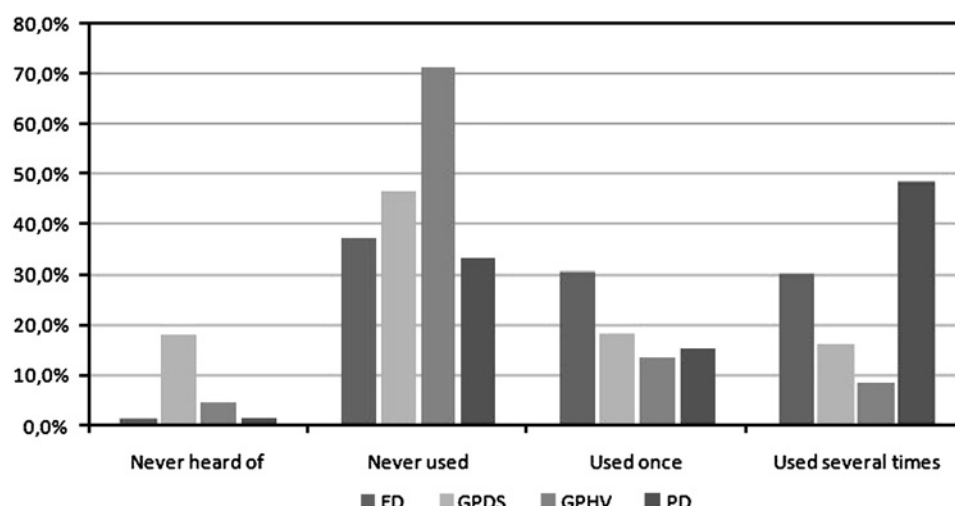
The attributes "access" to the service and "explanation" by the doctors show the highest performance across all services (table 3). Investigating the differences between the services at a significance level exceeding 0.95 by a one-way ANOVA shows following results: the perceived performance of "access" was rated highest for the emergency department. "Access" also scored highest for the GPDS although lower than for the ED. At the ED, "explanation" scores 5.73 (95% confidence interval 5.53 to 5.93). "Waiting time" is perceived slightly better at the GPDS than at the ED, whereas "technical examination" scores significantly higher at the ED compared to the GPDS and the GPHV. ED is superior to the other services in all criteria except for "waiting time" (table 4).

#### Child scenario

In the child scenario, we find similar results. The attribute that scores highest on perceived performance is "explanation". Here the highest expectations go to the paediatrician (table 5). The ANOVA results in table 6 show at a significance level exceeding 0.95, ED is perceived better than GPDS in "immediate technical examination", "payment", "access" and "explanation", whereas



**Figure 4** Experience with after-hours services: overall frequencies.



the latter is superior in “waiting time”. The comparison of ED and PD shows significant advantages for ED in “payment” and “access” and a lead for PD in “explanation”. Moreover, the results of the group comparison indicate an overall preference for both these services.

#### Motivation to comply

To compute the TRA score, we obtained the motivation to comply with the reference groups (partner and friends). In both scenarios, consumers consider the partner as more influential for the decision than the friends (table 2).

#### Opinion of reference groups

Consumers in the adult scenario believe that partners assess ED higher than GPHV (table 3). When children are involved, respondents assume that both reference groups would recommend PD over GPDS and GPHV (table 5).

#### Service choice: overall score using TRA and comparison of the services

Based on the TRA formula (figure 2), we computed the respondents’ individual TRA scores per service. Consequently, we are able to rank the different services for every respondent. The TRA approach assumes that patients decide for the service with the highest score. Afterwards, we computed the score means over all respondents. To interpret the power of the margins, we also checked the significances of difference between the scores. The number of items for attitude (five) and the subjective norms (two) reflect their relative contribution to the overall score.

Consumers rate—on average—ED higher than GPDS, although there is no significant difference in the evaluations of

GPDS and GPHV (table 7). When children are involved, also the paediatrician is preferred over GPDS and GPHV (table 8). The dominance of the ED and PD is consistent over both scenarios, indicating the external validity of the results.

#### Preference shares for services

##### Full model

According to the TRA, the highest score determines the service preference for each patient. In addition, we also examined the strength of this commitment. Therefore, we computed the score per service among the participants who prefer a particular service (*the preference share*), and the significance of differences between the preferred and the other services. We excluded cases when no clear first could be determined, that is, two or more services had equal highest TRA score. It reduced the sample size for both scenarios by 16 (adults, 10; children, 6) to 334.

The preference shares confirm the expected preference for the ED. Of all patients, 63% in the adult scenario and 47% in the child scenario would choose the ED (table 9).

We then applied a multigroup discriminant analysis. The dependent variable was the chosen service, whereas experience (figure 4) and sociodemographic items (table 1) were the explanatory ones. The cross-validated classification results did not show any improvement compared with the naive classification. However, further analysis of the preference shares by means of two group discriminant and regression analysis indicates a strong impact of experience on the service selection, whereas none of the other variables seems to influence the preference significantly. Therefore, we investigated the relation between preference and experience further. Because experience is nominally coded (0: “never heard of” and “never used”; 1: “used once” and “used several times”), cross-tabs and  $\chi^2$  test to check for dependency between the variables were applied.

The results for the both scenarios suggest that patients with experience in a specific in the GPDS have a higher likelihood to choose that service.

The  $\chi^2$  test ( $n=174$ ,  $df=1$ ) shows dependency between experience and preference for ED ( $\chi^2=2.80$ ,  $sig=0.094$ ), GPDS ( $\chi^2=12.42$ ,  $sig=0.000$ ) and GPHV ( $\chi^2=3.54$ ,  $sig=0.060$ ) at a 0.10 level. When children are involved in the choice, we also notice correlations between experience and the service choice. The  $\chi^2$  test ( $n=160$ ,  $df=1$ ) points out dependency between experience and preference for GPDS ( $\chi^2=9.53$ ,  $sig=0.002$ ) and PD ( $\chi^2=10.20$ ,  $sig=0.001$ ) at a 0.01 level but not for ED ( $\chi^2=0.66$ ,  $sig=0.417$ ) and GPHV ( $\chi^2=0.01$ ,  $sig=0.949$ ).

**Table 2** Importance of service attribute and motivation to comply in both scenarios: mean and 95% CI

Importance of attribute/motivation to comply	Adult scenario (n = 184)		Child scenario (n = 166)	
	Mean	95% CI	Mean	95% CI
Explanation	6.86	6.76 to 6.96	6.83	6.75 to 6.91
Immediate technical examination	6.33	6.21 to 6.45	6.28	6.13 to 6.43
Waiting time	6.29	6.15 to 6.44	6.15	5.96 to 6.34
Access	6.23	6.06 to 6.39	6.31	6.15 to 6.47
Payment	4.84	4.53 to 5.14	4.89	4.59 to 5.19
Partner/close family members	5.23	4.93 to 5.52	5.90	5.69 to 6.11
Friends/other family members	4.02	3.71 to 4.33	4.28	3.97 to 4.59

**Table 3** Perceived performance and opinion of reference group in adult scenario: mean and 95% CI

Perceived performance/opinion of reference group	ED		GPDS		GPHV	
	Mean	95% CI	Mean	95% CI	Mean	95% CI
Explanation	5.73	5.53 to 5.93	5.18	4.99 to 5.38	5.26	5.06 to 5.46
Immediate technical examination	5.51	5.33 to 5.68	4.68	4.50 to 4.85	4.54	4.35 to 4.73
Waiting time	3.27	3.00 to 3.54	3.93	3.72 to 4.15	3.60	3.37 to 3.83
Access	5.86	5.66 to 6.13	5.21	5.01 to 5.42	5.01	4.79 to 5.22
Payment	4.85	4.55 to 5.16	3.84	3.60 to 4.08	3.07	2.80 to 3.34
Partner/close family members	4.95	4.69 to 5.22	4.59	4.37 to 4.81	4.30	4.06 to 4.54
Friends/other family members	4.63	4.36 to 4.89	4.50	4.26 to 4.74	4.32	4.09 to 4.56

ED, emergency department; GPDS, general practitioner deputizing services; GPHV, GP home visit.

**Table 4** ANOVA results for perceived performance and motivation to comply in the adult scenario

Perceived performance/opinion of reference group	Significance of mean differences		Homogeneity of variances	Post hoc comparisons for mean differences (p Value)		
	F value	p Value		ED–GPDS	ED–GPHV	GPDS–GPHV
Explanation	8.698	0.000	0.230*	0.55 (0.000)	0.47 (0.003)	−0.08 (0.855)
Immediate technical examination	32.870	0.000	0.872*	0.83 (0.000)	0.96 (0.000)	0.14 (0.543)
Waiting time	7.670	0.001	0.000 <sup>†</sup>	−0.67 (0.001)	−0.33 (0.128)	0.34 (0.120)
Access	17.937	0.000	0.031 <sup>†</sup>	0.65 (0.000)	0.86 (0.000)	0.21 (0.352)
Payment	7.046	0.001	0.000 <sup>†</sup>	1.02 (0.000)	1.78 (0.000)	0.77 (0.000)
Partner/close family members	7.046	0.001	0.015 <sup>†</sup>	0.36 (0.099)	0.65 (0.001)	0.29 (0.211)
Friends/other family members	1.497	0.225	0.004 <sup>†</sup>	0.13 (0.760)	0.30 (0.198)	0.18 (0.568)

ANOVA, analysis of variance; ED, emergency department; GPDS, general practitioner deputizing services; GPHV, GP home visit.

Applied post hoc test: \*Tukey honest significant difference test; <sup>†</sup>Dunnett C.**Table 5** Perceived performance and opinion of reference group in child scenario: mean and 95% CI

Perceived performance/opinion of reference group	ED		GPDS		GPHV		PD	
	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI
Explanation	5.60	5.38 to 5.81	5.17	4.99 to 5.36	5.49	5.29 to 5.70	6.38	6.23 to 6.53
Access	5.95	5.76 to 6.15	5.11	4.91 to 5.32	5.01	4.78 to 5.25	5.00	4.74 to 5.26
Immediate technical examination	5.60	5.42 to 5.78	4.38	4.22 to 4.55	4.26	4.05 to 4.46	5.38	5.19 to 5.57
Waiting time	3.41	3.13 to 3.69	4.02	3.82 to 4.22	3.54	3.31 to 3.77	3.37	3.10 to 3.64
Payment	4.77	4.46 to 5.07	3.54	3.31 to 3.78	2.87	2.60 to 3.15	2.75	2.47 to 3.04
Partner/close family members	4.67	4.38 to 4.96	4.33	4.07 to 4.58	4.28	4.03 to 4.54	5.11	4.82 to 5.40
Friends/other family members	4.84	4.57 to 5.12	4.63	4.41 to 4.86	4.64	4.38 to 4.90	5.27	4.98 to 5.56

ED, emergency department; GPDS, general practitioner deputizing services; GPHV, GP home visit; PD, paediatrician.

### Restricted model

Because experience is a strong predictor for the GPDS choice, we restricted the model by using only GPDS-experienced respondents (having visited the GPDS at least once: n=70 (adult scenario), n=52 (child scenario)). First, the ANOVA results for TRA score show that the differences between the results of the most preferred services are neither for the adult (ED–GPDS: difference in TRA score 0.53, p=0.997) nor for the child scenario (ED–GPDS: difference in TRA score 1.45, p=0.998; GPDS–PD: difference in TRA score: 6.47, p=0.876) significant at a 0.05 level. This indicates that patients do not have a strong preference for ED or PD over GPDS once the GPDS has been experienced.

Furthermore, the influence of “experience” is illustrated in the choice (“preference share”) of the GPDS-experienced respondents (having visited the GPDS at least once). For descriptive purpose, table 10 displays the first service choice for the restricted model: the preference for GPDS is stronger (adult scenario: 19% to 31%, p=0.020); child scenario: 13% to 25%, p=0.065) than in the unrestricted study population. The p value for the child scenario is slightly above the common critical level of 0.05, which can be

explained by the low number of GPDS experienced. However, overall findings support the trend towards GPDS once the service was experienced. We expect also for the other services a positive impact of experience on choice, but we limit our analysis to the newly established GPDS as the focal point of our study.

### DISCUSSION AND CONCLUSION

Although overall results show that people prefer the ED when in need for medical after-hours care, this study also confirms that people are loyal to the service they have experience with. Experience indeed is the most important factor to choose a service. People having experienced the new GPDS once tend to return to the service. Research in the UK, using other methodologies, also concluded that the loyalty for the GPDS increases when having used it once.<sup>25 32</sup>

The overall results concerning importance and perceived performance are very similar for both scenarios, indicating a high validity of the questionnaire. The most important attribute is “explanation”, meaning that the doctor gives information about

**Table 6** ANOVA results for perceived performance and motivation to comply in the child scenario

Perceived performance/ opinion of reference group	Significance of mean differences		Homogeneity of variances	Post hoc comparisons for mean differences (p Value)					
	F value	p Value		ED–GPDS	ED–GPHV	ED–PD	GPDS–GPHV	GPDS–PD	GPHV–PD
Explanation	27.600	0.000	0.000*	0.42 (0.003)	0.10 (0.880)	−0.78 (0.000)	−0.32 (0.095)	−1.20 (0.000)	−0.89 (0.000)
Immediate technical examination	53.433	0.000	0.041*	1.22 (0.000)	1.34 (0.000)	0.22 (0.345)	0.12 (0.787)	−1.00 (0.000)	−1.12 (0.000)
Waiting time	5.711	0.001	0.000*	−0.61 (0.003)	−0.13 (0.880)	0.04 (0.995)	0.48 (0.036)	0.66 (0.001)	0.17 (0.761)
Access	16.251	0.000	0.000*	0.84 (0.000)	0.94 (0.000)	0.95 (0.000)	0.10 (0.920)	0.11 (0.892)	0.01 (0.999)
Payment	43.336	0.000	0.000*	1.22 (0.000)	1.89 (0.000)	2.01 (0.000)	0.67 (0.004)	0.79 (0.000)	0.12 (0.930)
Partner/close family members	7.675	0.000	0.004*	0.34 (0.295)	0.39 (1.99)	−0.44 (0.111)	0.04 (0.996)	−0.78 (0.000)	−0.83 (0.000)
Friends/other family members	4.998	0.002	0.000*	0.21 (0.682)	0.20 (0.701)	−0.43 (0.109)	−0.01 (0.999)	−0.64 (0.004)	−0.63 (0.005)

ANOVA, analysis of variance; ED, emergency department; GPDS, general practitioner deputizing services; GPHV, GP home visit; PD, paediatrician.

Applied post hoc test: \*Dunnett C.

**Table 7** ANOVA results for TRA score in the adult scenario

	Significance of mean differences		Homogeneity of variances	Post hoc comparisons for mean differences (p Value)		
	F value	p Value		ED–GPDS	ED–GPHV	GPDS–GPHV
TRA score	17.342	0.000	0.157*	16.359 (0.001)	25.336 (0.000)	8.977 (0.100)

ANOVA, analysis of variance; ED, emergency department; GPDS, general practitioner deputizing services; GPHV, GP home visit.

Applied post hoc test: \*Tukey honest significant difference test.

**Table 8** ANOVA results for TRA score in the child scenario

	Significance of mean differences		Homogeneity of variances	Post hoc comparisons for mean differences (p Value)					
	F value	p Value		ED–GPDS	ED–GPHV	ED–PD	GPDS–GPHV	GPDS–PD	GPHV–PD
TRA Score	15.552	0.000	0.003*	22.092 (0.000)	28.553 (0.000)	8.160 (0.297)	6.461 (0.507)	−13.932 (0.015)	−20.393 (0.000)

ANOVA, analysis of variance; ED, emergency department; GPDS, general practitioner deputizing services; GPHV, GP home visit; PD, paediatrician.

Applied post hoc test: \*Dunnett C.

the illness and the treatment. This is confirmed by other researchers: having a doctor who listens, takes time and gives explanation is seen as a key element for successful general practice.<sup>25 26 33 34</sup> As ED is the most preferred service, our study shows that the main reasons for choosing ED are “sufficient explanation” and “easy access”. Consumers also expect immediate technical examination at the ED and when visiting a paediatrician. Compared to the ED and the paediatrician, we found that “waiting time” is the most appreciated attribute at the GPDS.

We used the FNC services and we acknowledge our results may be biased to parents with young children. However, in Belgium, this young population is known to use medical services more than the other groups.<sup>27</sup> Using this strategy, we were able to acquire a reasonable cross section of the population of the city. In this setting, 44% of our participants were of foreign origin (foreign nationality currently or at birth). Compared with data of the municipality, 26.8% of the citizens are of foreign origin, indicating this population was relatively overrepresented in our study. In addition, the level of education differs from data in Belgium. Our respondents had a cumulative percentage of

a degree of lower secondary education or less of 14.3%. In 2004, the data of Flanders mention approximately 18% of people aged 25 to 34 years having a degree of lower secondary education or less.<sup>35</sup> In our respondents, we do still lack the group of foreign citizens who do not understand the Dutch, English or modern Arabic language and have a lower educational level. Further qualitative study designs for instance by interviewing stakeholders, who represent these groups, could be used to get more insight in these communities. In this case, contacting imams, spokesmen and youth services of these communities may help clarifying the research question for these specific subpopulations.

Experience has a strong positive influence on choosing a particular after-hours medical service. Especially for the new GPDS, we can conclude that people who have experienced it

**Table 10** Preference shares for the different services: full sample versus GPDS experienced sample

Adult scenario preference shares			
Service	Full sample (a) (%)	GPDS experienced (b) (%)	Difference: b – a*
ED	63	49	−14% (0.108)
GPDS	19	31	+12% (0.034)
GPHV	18	19	+1% (0.747)
Child scenario preference shares			
Service	Full sample (a)	GPDS experienced (b)	Difference: b – a*
ED	47	44	−3% (0.905)
PD	31	27	−4% (0.720)
GPDS	13	25	+12% (0.065)
GPHV	9	4	−5% (0.140)

\*p Value of significance test of means in parenthesis.

**Table 9** Preference share for both scenarios

Service	Adult scenario (%)	Child scenario (%)
ED	63	47
GPDS	19	31
GPHV	18	13
PD	—	9
Total	100	100

before are more likely to choose it again. The doctor working at that service needs to offer a clear explanation about the illness and its treatment. To strengthen these effects, the service has to be easily accessible and waiting time must be reduced.

If health authorities want to alter patterns of consumers of medical care by setting up new GPDSs, the first concern has to be to inform people about all the available after-hours services, their specific aims and tasks. To increase the choice for GPDS, authorities need to focus on current non-users of the GPDS and increase their trial rate for this new service. Subsequently, the GPDS should ensure the experience with the service is positive because this facilitates the choice for the same service when in need for help.

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