

Cancer patients' preferences for psychotherapy: a conjoint analysis

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Abstract

Aim: Psychotherapy is an effective intervention for depressive cancer patients. However, there are barriers to applying psychotherapy in clinical settings. This study assessed cancer patients' preferences for psychotherapy using a conjoint analysis.

Methods: We conducted a single-center, cross-sectional study using a self-reported questionnaire between March 2018 and March 2020. The questionnaire asked for patients' preferences for 48 psychotherapy scenarios according to a combination of type, length, price, and frequency. We conducted a conjoint analysis, calculating the relative importance and part worth value of each factor.

Results: Cancer patients consider type as the most important factor when deciding whether to undergo psychotherapy (relative importance: 37.5%), followed by frequency (23.4%), price (19.6%), and length (19.5%). Cancer patients value life reviews highly among the four psychotherapy types.

Conclusion: Cancer patients consider the type of psychotherapy to be the most important factors when choosing it, although their preferences do depend on their individual characteristics.

Key Messages

Cancer patients generally consider the type and content of psychotherapy as the most important factors when deciding to undertake it. Their preferences do depend on certain individual characteristics, such as gender, age, and state of their cancer.

Background

Cancer is an often fatal and severe medical illness that leads to serious burdens for patients. Cancer is one of the most common causes of death internationally, especially in advanced countries (Dagenais et al., 2019). In 2012, cancer accounted for 8.2 million deaths, resulting in 13% of the total deaths worldwide (World Health Organization, 2020). In Japan, cancer represents the most prominent cause of death and morbidity, with an estimated 1.0 million new cases and 0.4 million deaths in 2020 (Ministry of Health Labour and Welfare, 2011).

Many cancer patients experience numerous stressful events during their treatment period, resulting in significant psychological distress. Psychological distress is a collective term that describes patients' commonly experienced mental and emotional burdens, including factors like anxiety, depression, fear, or worry. Developing psychiatric disorders is also a common problem faced by many cancer patients. In fact, 10-20% of all cancer patients are diagnosed with major depressive disorder, with 20-40% being diagnosed with depression, including both depressive and adjustment disorders (Krebber et al., 2014; Mitchell et al., 2011). Facing advanced cancer, its recurrence, being of a younger age, or experiencing physical symptoms are the most common risk factors in the development of psychiatric problems among cancer patients (Miller & Massie, 2010). In addition, these psychological problems can lead to suicide among cancer patients. The suicide rate of cancer patients is found to be 12.6 times higher than that of healthy people (Fang et al., 2012).

Psychotherapy is the most useful non-pharmacological treatment to help cancer patients in managing their psychological distress (Chen & Ahmad, 2018; Guan et al., 2016; Okuyama et al., 2017). Various types of psychotherapeutic approaches have been developed for use among cancer patients. Previous studies have outlined the efficacy of numerous psychotherapy techniques for cancer patients, such as supportive psychotherapy, cognitive behavioral therapy, and psychoanalytic therapy (Chen & Ahmad, 2018; Guan et al., 2016; Okuyama et al., 2017). Additionally, cognitive behavioral therapy includes problem-solving therapy, behavioral interventions, and mindfulness cognitive interventions (Finne et al., 2018; Haller et al., 2017; Hirai et al., 2012).

Psychotherapy has a clear effect on psychological distress in cancer patients. However, there are barriers to applying psychotherapy in a clinical setting. First, meta-analyses clearly demonstrate that there is a heterogeneity between studies due to wide variations among the psychotherapeutic interventions studied (Okuyama et al., 2017). Second, the efficacy of psychotherapeutic interventions depend on the clinical communication and utilization of hybrid skills of the practicing psychologists (McGuinness, 2012; Roos & Werbart, 2013; Zimmermann et al., 2017). Third, few studies have described any adverse event data of psychotherapy, although the dropout rate is known to be high according to previous research (Meister et al., 2020; Sharf et al., 2010). Therefore, an understanding of cancer patients' needs around psychotherapy is still needed in order to provide a more effective treatment method for their psychological distress.

Therefore, this study aimed to assess cancer patients' preferences for psychotherapy in Japan using a conjoint analysis approach. This will allow for the provision of effective psychotherapy that answers patients' needs via a conjoint and an economic analysis approach. This study seeks to provide information to allow for an improved consultation rate of psychotherapy among cancer patients.

Methods

Study setting and participants

We conducted a single-center, cross-sectional study using self-reported questionnaires. Patients were recruited from outpatient and inpatient units from a university hospital. The data were collected in the departments of Respiratory Medicine, Gastrointestinal Surgery, Femoral Surgery, and Head and Neck Surgery using self-reported questionnaires between March 2018 and March 2020. We included patients who (a) had cancer diagnoses and (b) were between the ages of 20 and 84 years old. The following patients were excluded from this study: (a) those who declined to participate, (b) those who were diagnosed by their attending doctor with severe physical, mental, or cognitive problems (e.g., serious adverse events, delirium, or dementia), and (c) those who had insufficient literacy skills.

Identifying Attributes

We conducted a preference elicitation study using semi-structured interviews with clinical psychologists who have experience in providing psychotherapy for cancer patients. This qualitative approach has been used in other preference studies to identify key factors (Bridges et al., 2012; Hofheinz et al., 2016). The interview was composed of the same counseling features that the clinical psychologists would usually provide with their clients, including the following factors: (1) type, (2) content, (3) length, (4) price, and (5) frequency. Each interview's audio was recorded, transcribed, and analyzed using content analysis.

Based on the psychologist interviews, Table 1 presents the final attributes and levels chosen for the conjoint analysis, with each description used in the questionnaire survey instrument. From the interviews, we combined the type and content of the psychotherapy sessions into a single theme, identifying the final four attributes and levels used in our analysis (Table 1). For the interviews, we used 4,000 Japanese yen as a benchmark for the price of psychotherapy, while setting 1,500 Japanese yen as a comparative health treatment price in reference to Japanese insurance institutions. In addition, we used 30 minutes as the benchmark in time spent within private room counseling, while setting 10 minutes as the comparative time spent for bedside counseling sessions. Additionally, a researcher (K.I.) translated and created the English versions of the attribute and level descriptions of the counseling features utilized in this study. A master's student translator, who has been living in English-speaking countries for the past four years, then back-translated the English version into Japanese.

Formulating Scenarios

To create the conjoint analysis choice tasks, we used a full-profile paired comparison. The combination of the four attributes with each level produced 48 ($4 \times 2 \times 2 \times 3$) possible scenarios, with it being used across all patterns. The scales and conjoint task were presented with careful definitions given for each attribute and specific instructions on how to complete the 5-point Likert scale questions and the conjoint choice tasks.

Clinical characteristics

We collected both demographic and clinical information from the self-completed questionnaires and the medical records. First, we included the following data: gender, age, place or recruitment, types of cancer, cancer stage, onset, treatments, performance status, marriage, education, job, and history of psychiatric treatments. We defined the age between 20 and 59 years old as younger, and stage III or IV cancer as advanced cancer. Second, we asked about patients' desire to attempt psychological counseling using the 5-point Likert scale questionnaire. We originally developed this question for this study.

Sample Size

The sample size calculation for a conjoint analysis is generally empirically determined because it is dependent on a number of conditions, such as the number of attributes and levels, as well as the complications of the given task. The sample size of the conjoint analysis ranges from 100 to 300 participants in previous healthcare studies (Marshall et al., 2010). Therefore, the sample size needed for this study was estimated to be almost 200 participants.

Statistical analyses

First, we summarized the characteristics of both the participants and hospitals utilizing standard descriptive statistics. Second, we conducted the conjoint analysis and calculated the relative importance and part worth value of each of the counseling factors. Third, we conducted a subgroup conjoint analysis among participants who were women ($n = 86$), of a younger age ($n = 49$), and had advanced cancer ($n = 91$). All data were analyzed using R version 4.0.2 with the R packages "dplyr," "tidyr," "readr," "readxl," and "conjoint."

Results

Demographic and clinical characteristics

Figure 1 is a flow diagram showing the number of study participants included. Of the 218 recruited participants, 189 cancer patients (86.7%) were included in the conjoint analysis. The study participants' characteristics are listed in Table 2. The gender ratio (men:women) was 1.1:1. One hundred and sixty-one (75.9%) of the participants were older than 60 years, 171 (80.7%) were outpatients, 140 (68.0%) were married, and 109 (52.2%) were unemployed. In addition, 104 (49.1%) were in an advanced stage of cancer, 175 (82.5%) had a high performance status ($PS = 0$), 152 (71.7%) had undergone surgery, and 107 (50.5%) had undergone chemotherapy.

Preferences for clinical psychotherapy

According to the conjoint analysis model (Figure 2), the participating patients considered the type of psychotherapy as the most important preference factor (relative importance: 37.5%), followed by frequency (23.4%), price (19.6%), and length (19.5%). The subgroup analysis also indicated that psychotherapy type is the most important among women, patients of a younger age, and those at an advanced cancer stage (35.7%, 30.7%, and 38.2% respectively; Table 3).

The participating cancer patients valued life reviews highly among the four types of psychotherapy when compared to problem solving, emotional control, or emotional expression (Figure 3). However, women and younger age patients valued psychotherapy for emotional control the most, with advanced cancer patients valuing psychotherapy for problem solving the highest (Table 3). In addition, all of the participating cancer patients valued a duration of 30 minutes over that of 10 minutes, as well as a price of 1,500 Japanese yen instead of 4,000 Japanese yen (Table 3).

Discussion

Our study yielded two major findings. First, we observed that the type of psychotherapy was more critical for its selection among cancer patients than was price, length, or frequency. Second, our results demonstrated, in terms of psychotherapy type, that cancer patients prefer life review therapy compared to those involving problem solving, emotional control, or emotional expression. This study was the first notable attempt to explore cancer patients' needs and preferences for psychotherapy in terms of medical services.

One important consequence from this study is that cancer patients choose whether to participate in psychotherapy while placing an emphasis on the intervention's content. The issues that cancer patients seek support for are clear among this population, although their perceived needs or worries are often quite different from one another (Caruso et al., 2017; Hisamura et al., 2018). In addition, adjustment disorder has been found to be the most common psychiatric diagnosis in cancer patients (Blazquez & Cruzado, 2016; van Beek et al., 2019). Cancer patients often experience clear and specific stressors rather than any original mood symptoms. However, this result may have been affected by either the chosen attributes or levels of the included counseling features. The maximum possible psychotherapy price, 4,000 Japanese yen, is affordable for cancer patients in Japan as it is a financially secure country. Furthermore, the minimum psychotherapy length, 10 minutes, was found to be enough time for the participants of this study who did not have a strong desire to attempt psychotherapy. Additionally, the characteristics of the counselor or counseling room may be a more critical component for cancer patients than the type, length, price, or frequency of psychotherapy. Therefore, this study suggests that the type of psychotherapy is important for cancer patients when choosing whether to undergo this treatment method if there are no other conditions being considered.

Another finding was that life review is the most preferred psychotherapy type among cancer patients. Life review provides patients an opportunity to construct positive thoughts about their lives, with it being one of the most effective non-pharmacological interventions, in addition to cognitive behavioral therapy or mindfulness-based stress reduction (Duncan et al., 2017; Zhang et al., 2017). Most patients will face various inevitable problems related to their disease and will thus require an alternative treatment strategy to maintain their mental health even if they are unfamiliar with psychological interventions. Most of the participants in our study were also at an elderly or retiring age, meaning that they were likely contemplating the end of their lives in some form. Therefore, life review undoubtedly contributes to the reduction of the psychological distress experienced by elderly cancer patients (Huang et al., 2020). In this regard, however, the results of our subgroup analyses revealed that cancer patients' preferences for psychotherapy depend on their individual characteristics, such as their gender, age, or the current state of their disease. Women and younger patients tend to prefer psychotherapy covering emotional control, according to this study's findings. This indicates that these patients hope to gain a sense of control over their emotions, especially when one considers the fact that women and younger patients face a similar risk for psychological distress, including problems like anxiety or depression, when dealing with cancer (Erim et al., 2019; Faye-Schjoll & Schou-Credal, 2019). It has been found that most young adult cancer patients and survivors need psychosocial support in the form of health information or in terms of their sexuality problems (Sender et al., 2020), so that they may focus on resolving their present feelings rather than reviewing those from their past. Conversely, our results also reveal that advanced cancer patients prefer problem-solving in terms of the psychotherapy type. Another study has demonstrated that patients with poor performance statuses have unmet needs in most domains involving physical, psychological, or social problems (Umezawa et al., 2015). Therefore, advanced cancer patients may

hope to spend their efforts resolving the physical or social problems at hand, rather than trying to control their psychological distress or review their lives.

In addition, there were no differences found in patients' needs for psychotherapy in all subgroups. The participating cancer patients naturally chose the less expensive psychotherapy option; however, it is difficult to provide psychotherapy at 1,500 Japanese yen in view of the labor costs of therapists. The Japanese government created a national license, entitled "Certified Public Psychologist," for all clinical psychologists in 2019 (Ministry of Health Labour and Welfare, 2019). The results of our study suggest that there is a compelling need for applied psychotherapy as a healthcare treatment plan for cancer patients.

Clinical implications

Our study yielded two major findings. First, cancer patients generally consider the type and content of psychotherapy when deciding to undertake it. Second, cancer patients' preferences do depend on certain individual characteristics, such as gender, age, and state of their cancer. In clinical setting, we should determine what cancer patients want from receiving psychotherapy and tailor it to patients' individual needs.

Study limitations

Our study has two important limitations. First, selection bias might have occurred because of our use of a single-center design in Japan. In this study, the number of breast cancer cases was smaller than that in previous studies. Thus, this may impact the generalizability of our findings. In addition, the number of patients who had an experience with or desire to undergo psychological counseling was especially small in this hospital. However, this was the first study to focus on cancer patients' needs for psychotherapy. Second, there were limitations to the conjoint analysis. As previously noted in the discussion, the type of psychotherapy could not have been the most critical factor in patients' selection of counseling across all participants because this varies depending on the options available. However, we selected the attributes and levels of counseling features in our conjoint analysis based on interview research gained by Japanese clinical psychologists.

Conclusion

Our findings indicate that most cancer patients consider the type or content of psychotherapy as the most important factor when determining whether or not they wish to receive this treatment form, although their preferences for psychotherapy do depend on their individual characteristics. This was the first study to clarify cancer patients' preferences for psychotherapy, despite its few methodological limitations.

Declarations

Funding

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Conflict of interest

Not applicable.

Ethics approval

All the procedures were in accordance with the ethical standards of the responsible committees on human experimentation (institutional and national) and with the Helsinki Declaration. The study was approved by the independent institutional review board (IRB) of the Tokyo Medical and Dental University (M2017-226).

Consent to participate

Informed consent was obtained, in writing, from all participants after they had received verbal explanations of the study procedure. Participants answered anonymous questionnaires and were identified by code numbers.

Consent to publication

Not applicable.

Availability of data and material

The datasets during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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Code availability

Not applicable.

Authors' contributions

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Tables

Table 1. Attributes and level descriptions of the counselling features		
Attribute	Level	Description
Type	Problem solving	Reflect on daily life problems and search for solutions together.
	Emotional control	Learn skills to distract from or control one's emotions.
	Life review	Review one's life and its purpose or meaning.
	Emotional expression	Talk about one's distress or feelings in order to gain relief.
Length	10 minutes	
	30 minutes	
Price	1,500 Japanese yen	
	4,000 Japanese yen	
Frequency	Every two weeks	
	Every month	
	Arrange schedules around other visits	

Table 2. Characteristics of the study participants	
	n (%)
Gender	
Men	112 (52.8)
Women	100 (47.2)
Age	
20-29 years	2 (0.9)
30-39 years	4 (1.9)
40-49 years	13 (6.1)
50-59 years	32 (15.1)
60-69 years	67 (31.6)
70-79 years	80 (37.7)
80-84 years	14 (6.6)
Place of recruitment	
Inpatient	41 (19.3)
Outpatient	171 (80.7)
Types of cancer	
Bowel	59 (27.8)
Esophagus	51 (24.1)
Head and neck	38 (17.9)
Lung	21 (9.9)
Uterus	20 (9.4)
Ovary	15 (7.1)
Thyroid	5 (2.4)
Other	3 (1.4)
Cancer stage	
0	16 (7.5)
I	43 (20.3)
II	45 (21.2)
III	56 (26.4)
IV	46 (21.7)
Onset	
Primary	165 (77.8)
Secondary	47 (22.2)

Treatments (Overlapped)	
Surgery	152 (71.7)
Chemotherapy	107 (50.5)
Radiation therapy	51 (24.1)
Performance Status	
0	175 (82.5)
1	25 (11.8)
2	12 (5.7)
Marriage	
Single	66 (31.1)
Married	140 (68.0)
Education	
Less than high school	19 (9.1)
High school	87 (41.6)
2-year college	32 (15.3)
4-year college or postgraduate qualification	71 (34.0)
Job	
Unemployed	109 (52.2)
Part-time	23 (11.0)
Full-time	38 (18.2)
Self-owned or freelance	29 (13.9)
Others	10 (4.8)
Psychiatric treatments (Overlapped)	
History of psychiatric visits	14 (6.6)
History of psychiatric medication	54 (25.5)
History of psychological counseling	6 (2.8)
Desire to attempt psychological counseling	
Never want to attempt it	19 (9.0)
Do not especially want to attempt it	72 (34.0)
Neither want to attempt nor reject it	71 (33.5)
Will attempt it after being encouraged to do so	43 (20.3)
Want to attempt it	7 (3.3)

Table 3. Subgroup conjoint analysis								
	All (n = 189)		Women (n = 86)		Younger (n = 49)		Advanced cancer (n = 91)	
	Relative importance	Part worth value	Relative importance	Part worth value	Relative importance	Part worth value	Relative importance	Part worth value
Type	37.46		35.68		30.71		38.15	
Problem solving		-.11		-.01		.02		.03
Emotional control		-.04		.06		.07		.02
Life review		.26		-.10		-.14		-.05
Emotional expression		-.10		.05		.05		.00
Length	19.52		19.73		22.29		18.50	
10 minutes		-.22		-.12		-.21		-.07
30 minutes		.22		.12		.21		.07
Price	19.59		20.37		23.16		18.69	
1,500 Japanese yen		.21		.10		.20		.07
4,000 Japanese yen		-.21		-.10		-.20		-.07
Frequency	23.43		24.22		23.84		24.65	
Every two weeks		-.17		-.07		-.14		-.06
Every month		.25		.03		.05		.03
Arrange schedules around other visits		-.08		.03		.09		.03

Figures

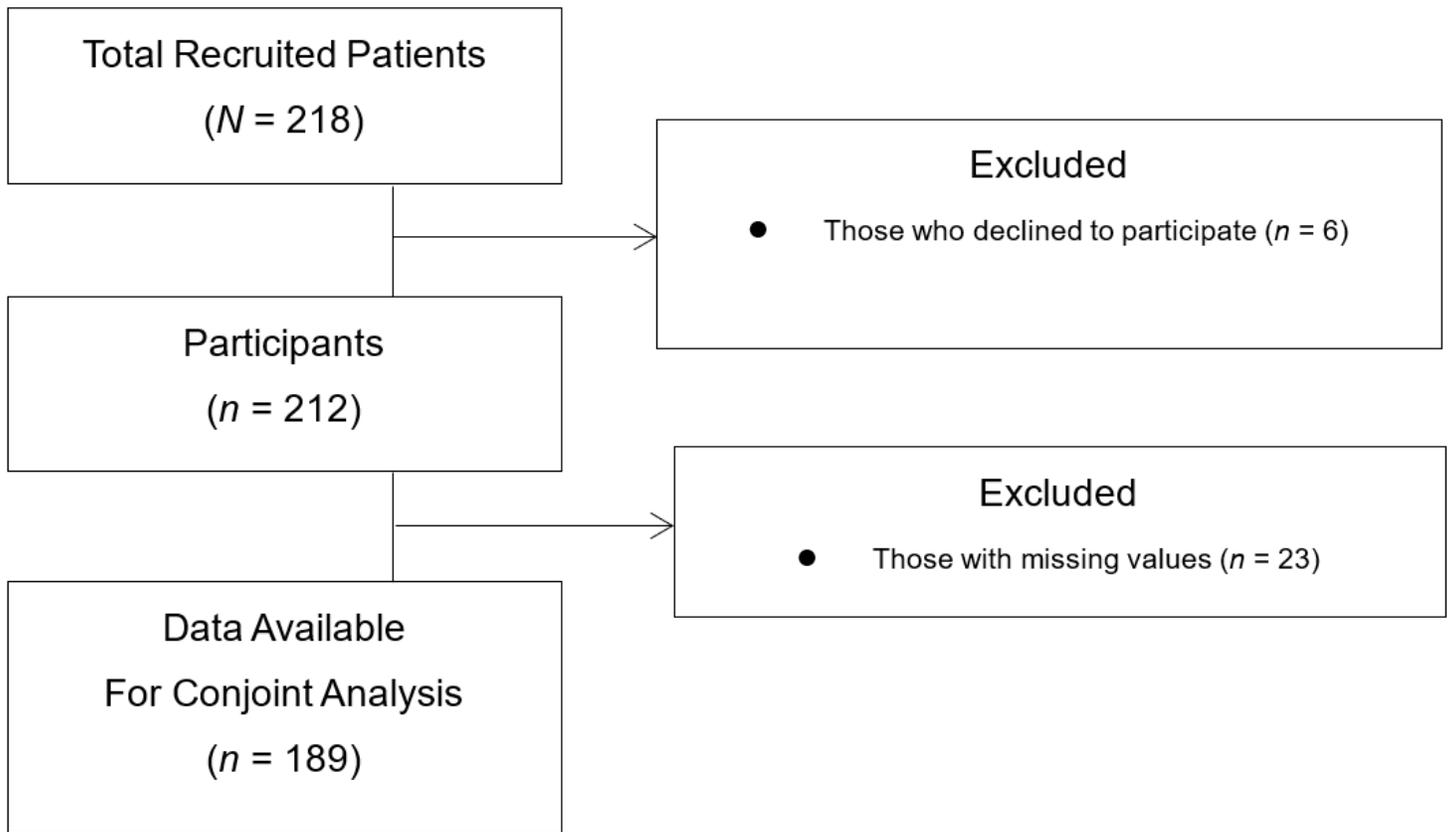


Figure 1

Flow diagram of the study participants

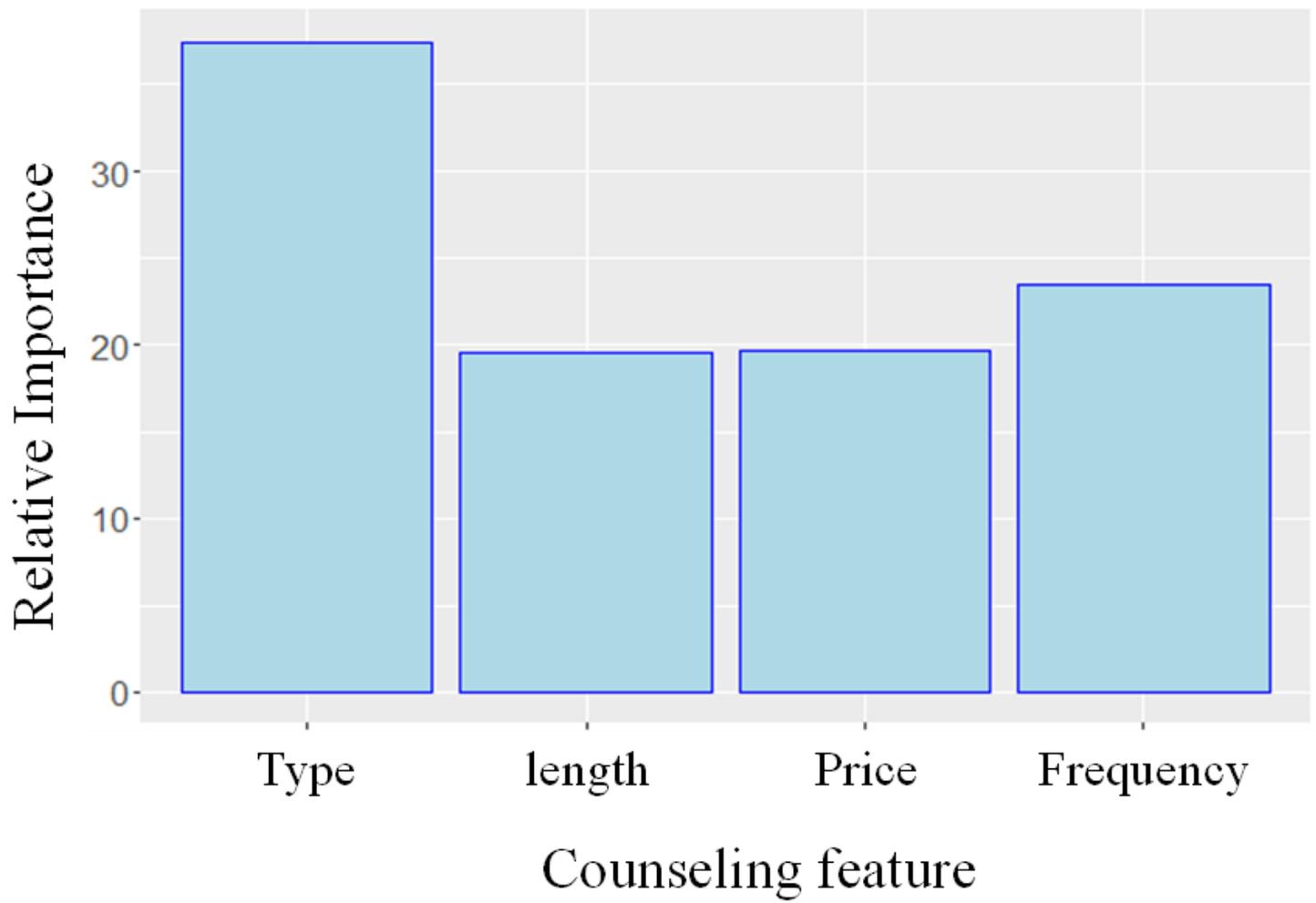


Figure 2

Relative importance of the different attributes

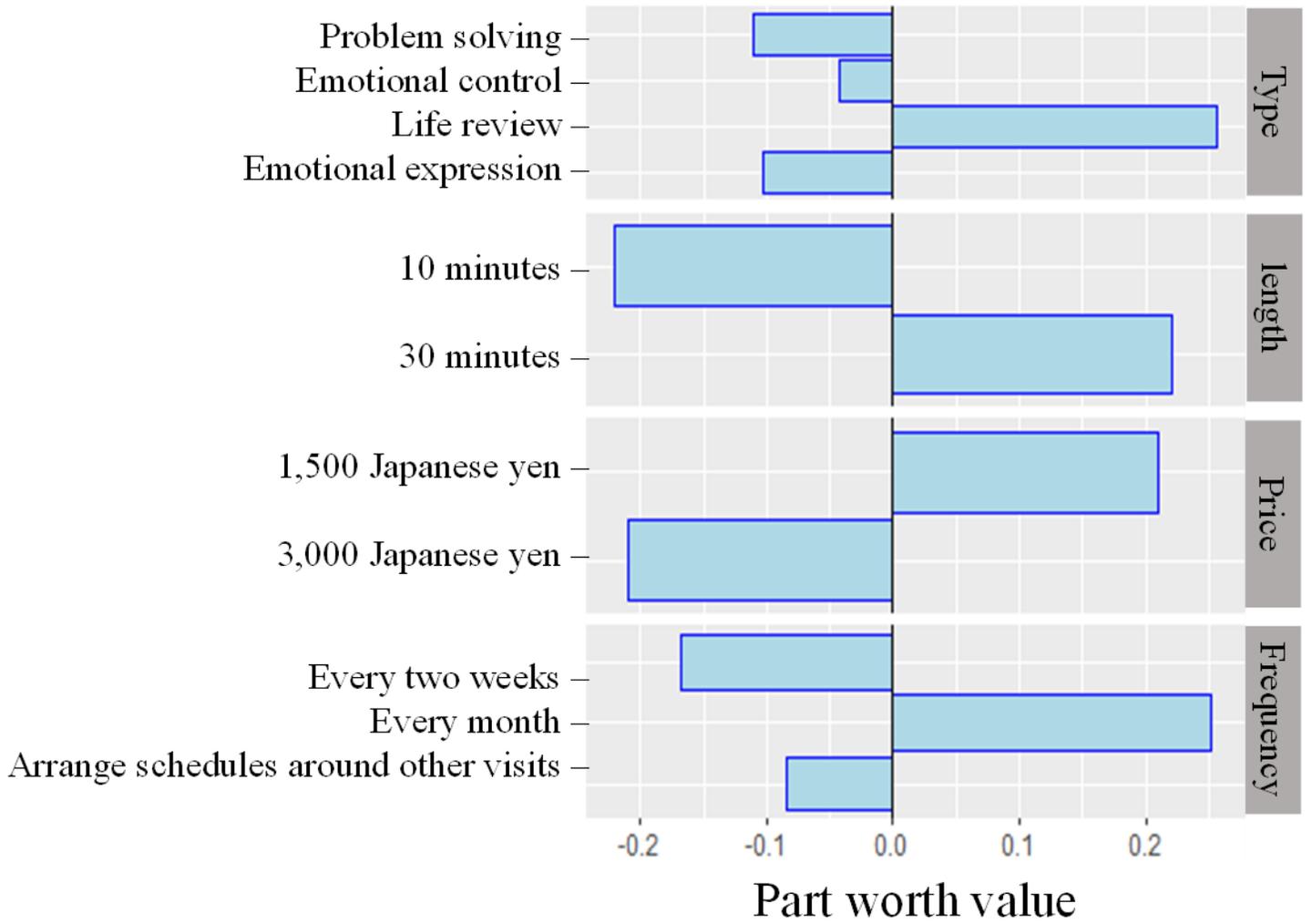


Figure 3

Part worth values of the counselling factors