

Willingness to Pay for mRNA-Based Anti-Cancer Treatment: Results from a Contingent Valuation in Israel

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Background

The application of **mRNA** technology in the global vaccination campaign against the Covid-19 pandemic has proven to be safe and effective in mortality and morbidity prevention. This technology is currently being investigated for various diseases, including cancer.

Willingness to Pay (WTP) studies are used to assess the preferences of the general public and different stakeholders regarding medical interventions within the healthcare system.

Objectives

To evaluate the WTP of the general population in Israel for a hypothetical novel mRNA-based treatment for specific oncology indications

Methods

- Participants were presented with a hypothetical scenario, in which a mRNA-based intervention increases the likelihood of cure for melanoma, lung cancer and some other cancer types from 20% to 40% or 60%.
- Cure was defined as a durable survival of 5 years.
- Contingent valuation** methodology was used to elicit WTP, by delivering a web-based questionnaire to a representative sample of the Israeli general population in May 2022.
- Following characteristics were collected:
 - Demographics – sex, age, family status, kids, religion, religion identification, region, income, education
 - Health - health status, health insurance, cancer occurrence, cancer type, Covid vaccine, heard about mRNA
 - Risk - healthy and balanced nutrition, exercise, periodic medial checks, smoking
 - Technology - technology attitude, medical innovation attitude

Results

WTP values

531 respondents completed the questionnaire. Mean (\pm SD) and median WTP for the proposed hypothetical treatment in both scenarios were ILS65,000 (\pm ILS114,000) and ILS20,000, respectively. The WTP was skewed towards zero (skewness = 2.853), and 9.6% of respondents were not willing to pay any amount (see Figure below).

Characteristics associated with higher WTP

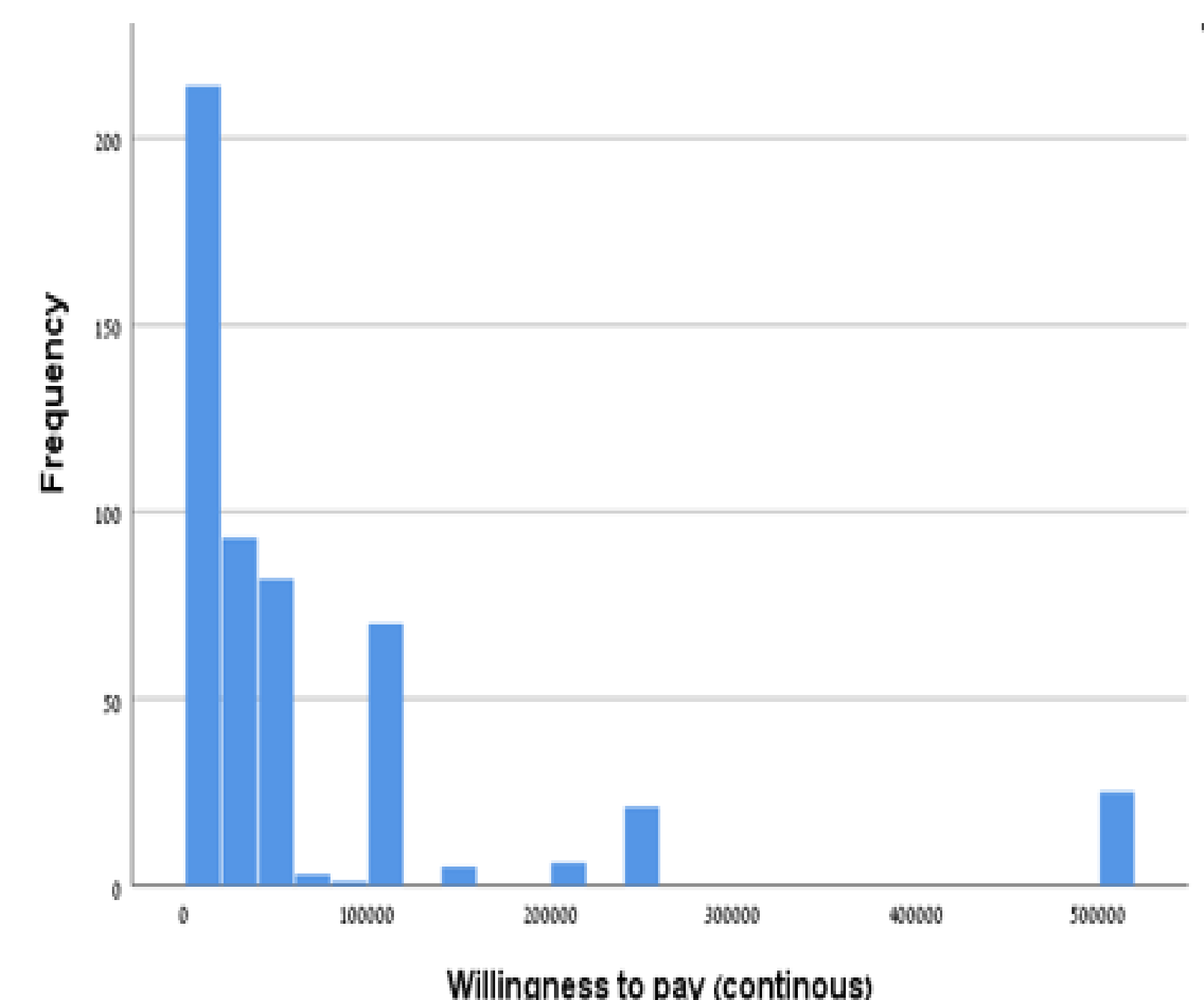
Jews compared with other populations ($p < 0.01$), higher income ($p < 0.01$), reporting a good health status ($p < 0.05$), having supplementary health insurance ($p < 0.05$), technology oriented ($p < 0.001$) and tendency to adopt medical innovations ($p < 0.001$).

Increase in durable survival to 40%/60%

No statistical difference between the two scenarios was found.

Multiple variable analyses

Logistic and OLS regressions indicated that age, religion, income and medical innovation attitude are the most significant independent variables in predicting respondents' WTP.



Discussion

- Despite the scientific breakthroughs in oncology treatment over the last few decades, including immunotherapy, many types of cancer are still incurable.
- There is a need to examine the public perception of potential innovative interventions.
- Israel is known to be an early adopter of research advances and recently was a global pioneer in a large-scale Covid-19 vaccination campaign using mRNA technology.
- The intense interest has accelerated clinical trials to examine its applicability in other therapeutic areas.

Recommendations

Our results can inform policymakers, pharmaceutical industry and other stakeholders in light of the expected development of innovative mRNA-based treatments.

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