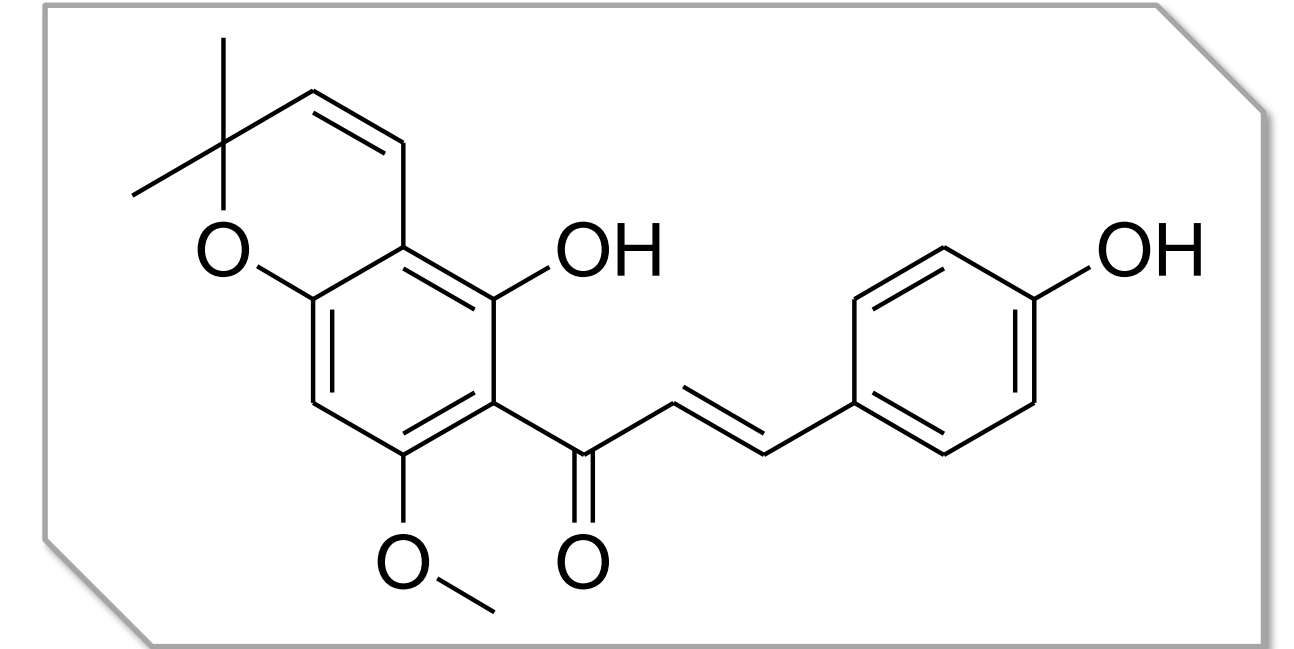


New Hops-Products for Neuroprotection and Regeneration: Consumer Insights and Product Expectations

Miriam Wolf, Agnes Emberger-Klein, Kristin Werner, Corinna Urmann, Herbert Riepl, Klaus Menrad

Background

- Secondary plant compounds (prenyl flavonoids) in hops (*Humulus lupulus* L.), found in by-products of the hops processing industry, have the potential to stimulate the formation of neurons [1, 2].
- These hops prenyl flavonoids could be utilized in modern therapeutic approaches for neurodegenerative diseases (e.g. dementia, depression) and neuroprotection (e.g. cognition enhancers).
- Growing demand of Natural Health Products (NHP) – including herbal medicine as well as natural food supplements



Objectives of this study

I. What are choice relevant product attributes for NHP consumers and which utility have these attributes?

II. Who are potential user groups for cognition enhancers based on hops?

Methods: National representative online survey in Germany, including a Conjoint-Based-Choice (CBC)-Experiment, n = 1584

Results

CBC-Design

Base Product:
• Dradgees

Duration:
• for 1 month

Ingredient:
• Hops extracts

Effect:
• Cognition & concentration support

	Option 1	Option 2	Option 3
Package			
Overpack			
Registration	Over-the-counter Herbal Medicine	Over-the-counter Herbal Medicine	Natural Nutrition Supplement
Interactions	none	with alcohol	with other medicine
vegan	no information	no yes	no information
Price	39,99€	19,99€	9,99€
Purchase Location	Drug Store	Pharmacy	online
	<input type="button" value="choose"/>	<input type="button" value="choose"/>	<input type="button" value="choose"/>

Option 4

I would choose **none** of the option above.

Latent-Class-Analysis

Best Classing Solution with max. homogeneity within groups and max. heterogeneity between groups according to product choice and attribute preferences

n=1587 (100%)	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
n (%)	14%	7%	21%	22%	25%	11%
None-Option	264.5	-28.2	201.5	174.8	-369.3	117.1

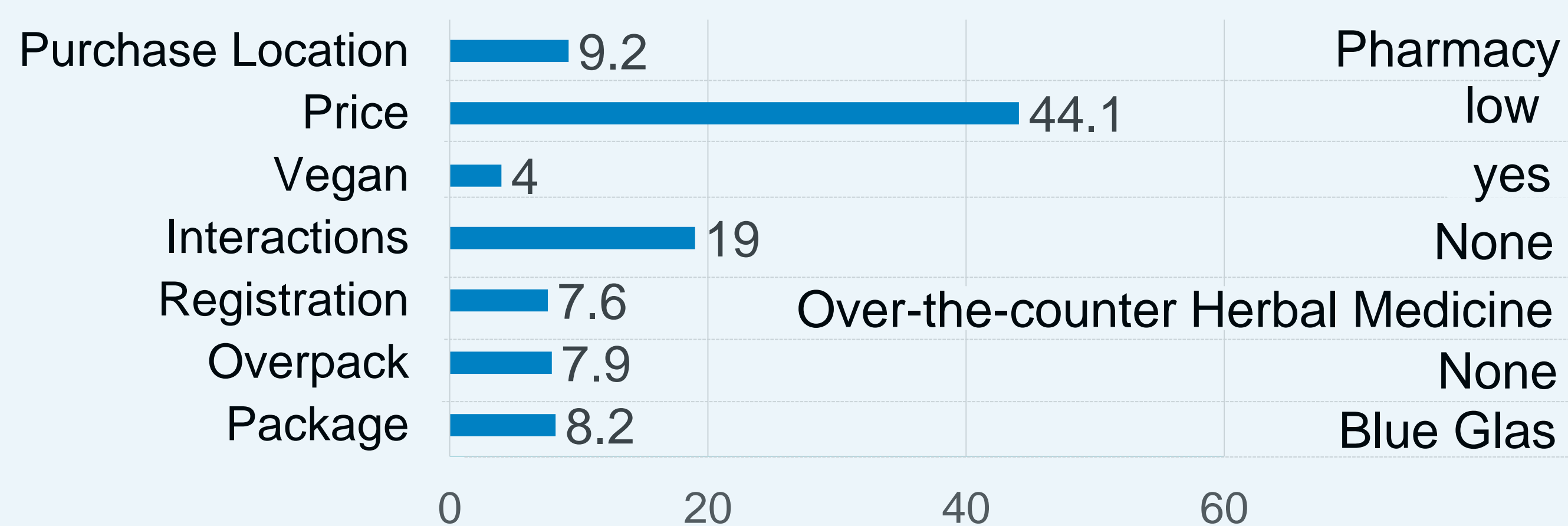
Group 5: Dominant Characteristics

- Gender: female
- Age: 30-59 years
- School Education > 12 years
- Net-Income: 2600-4999€/month
- Health Insurance: Public
- Vegetarian Diet: 26%



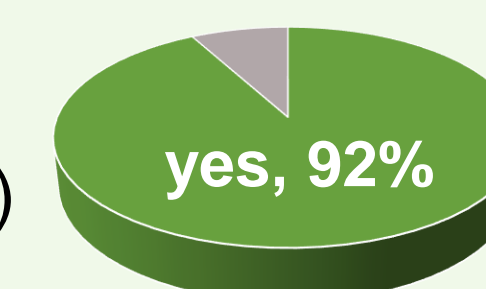
Relevance of product attributes (%)

Highest Preference for:

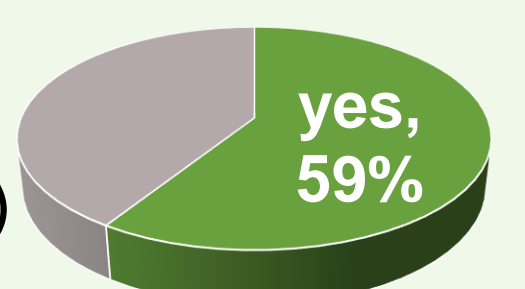


Interest to use the new hops NHP...

... if necessary
(e.g. first symphomes)

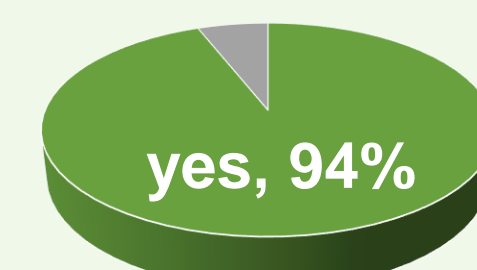


... preventive
(e.g. to avoid demencia)

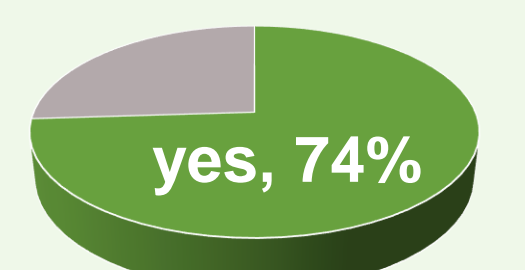


Willing to try new NHP with...

... *known*
herbal extracts



... *unknown*
herbal extracts



Conclusion

- Most choice relevant product attributes are the price (low), (no) interactions and the purchase location (pharmacy)
- Least utility shows the attribute of being vegan (slight preference)



- 25% of German NHP user are within one potential user group, characterized by great openness and interest in innovative, neuroactive NHP

- Possibility to adopt this approach to other application fields to examine the utility of selected product attributes and potential user groups of (new) NHP for optimized product development and targeted marketing

References

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- [2] Kirching M, Bieler L, Tevini J, Vogl M, Haschke-Becher E, Felder TK, Couillard-Despres S, Riepl H, Urmann C. Development and characterization of the neuroregenerative xanthohumol c/Hydroxypropyl-β-cyclodextrin complex suitable for parenteral administration. Planta medica 2019; 85: 1233-1241



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