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updates

in individual's social, and environmental contexts that determine their food choices on OFDS.

Sampling and recruitment

We used convenience sampling to recruit participants for this study. e eligibility criteria for inclusion were limited to English speaking adults, aged 18 to 45 years, who reported regular use of OFDS (at least once per month), living in Victoria, Australia. Emerging evidence identifies adults between 18 and 45 years as high users of OFDS and hence this age range was selected for this study [7, 12]. e definition of 'regular' of OFDS use was informed by prior studies investigating takeaway food purchasing practices [16, 25, 26]. e study was advertised via university social media accounts (including X, Facebook and LinkedIn). Participants who expressed interest in participating were assessed for eligibility by the primary author, and those meeting the eligibility requirements received a plain language statement. Written informed consent was obtained prior to commencing the study. Following completion of the interview, participants were given a 50 Australian Dollars (AUD) supermarket voucher as a thank-you for their participation.

Data collection procedure

As food choice decisions are both personal and complex, in-depth interviews was considered an appropriate approach to explore individuals' perspectives and reasons for making food choice decisions on OFDS. Prior to study commencement, the interview guide was pilot tested with two eligible individuals to assess the appropriateness of the questions in addressing the research question, and amendments were made as necessary. e primary author conducted 30–45-minute in-depth semi-structured interviews virtually using the Zoom platform (Supplementary Table 2: Interview topic guide). In the interviews, we first gathered the participants basic demographic and OFDS related information. Basic demographic details included age, sex, household income, highest education completed, postcode, and the number of children less than 18 years of age living in their household. OFDS related information included frequency of using OFDS, choice of OFDS used and if participants held a membership for OFDS. We then asked the participants to share their experience of ordering food from start to finish using OFDS. roughout the exploration, we asked participants to reflect on the factors that influence their food choices on the OFDS. Lastly, we asked participants if and how they could be enabled to make healthy food choices on OFDS. To explore this, we prompted participants to reflect about the healthy food retail approaches they may have observed when purchasing food at the supermarket and encouraged them to think of potential ways to apply them to the OFDS. is allowed us to gauge their perceptions and potential actions towards supporting healthier food choices on OFDS.

We used a paid professional transcription service based in Australia, to transcribe verbatim audio-recorded interviews. 15% of the transcripts were verified by the primary author for their accuracy and reliability. e primary author reflected on her position as an ethnically, culturally and linguistically diverse, female, public health academic with a young family and a previous user of OFDS. For maintaining rigor in our research process, through best practice verification strategies [27] such as continuous self-reflection through keeping notes and maintaining transparency (reflexivity), discussing preliminary research findings and interpretations with two co-authors (AP and KB) (peer debriefing) and corroborating findings with previously published literature, the primary author minimised bias in the data collection and analysis process.

Data analysis

Transcripts were imported into QSR-NVivo 12 to manage the data, facilitate coding and analysis. To get an in depth understanding of consumers drivers of food choices on OFDS, a thematic analysis approach was undertaken. Identifying patterns in consumers perspective at every step of their food purchase journey on the OFDS generated in-depth insights into the topic. Using Braun and Clark's six-step thematic analysis process [28], the coding process including a combination of inductive and deductive reasoning. Following the familiarisation with the data, the transcripts were coded inductively to identify words, phrases and patterns describing the multiple factors that influenced Australian adult's food choices on OFDS and participants' perceptions towards actions that could support healthier food choices on OFDS. Next, all the recurring and distinctive codes were reviewed and organised into sub-themes to reflect the participants motivations to food choice decisions on OFDS. e sub-themes were then deductively and axially coded into themes aligned to the individual, social and environmental factors, guided by the socio-ecological model to identify relationships between the themes and sub-themes, and contextualise the findings. AG, AP and KB discussed the themes throughout the process to ensure that consumers reasons and motivations for their food choices on OFDS were accurately summarised within the themes.

Results

Participant characteristics

A total of 30 Australian adults participated in the study and over 80% participants ($n=25$) used OFDS for food purchases 2 to 5 times per week. e study sample was mostly women (80%) ($n=24$), with a mean age of 28

years (age range: 18–45 years), and the majority (90%) lived in metropolitan suburbs classified as having a high socioeconomic status within Melbourne, Victoria, based on the Australian Bureau of Statistics Socioeconomic Indices for Areas. Most (73%, $n = 22$) participants had a household income over 80,000 Australian Dollars ($AUD) (after tax), over 85% ($n = 26$) held bachelor's or post-graduate degrees and 20% lived in a household with one or more children less than 18 years of age ($n = 6$).

ree leading OFDS in Australia were used by the participants, namely, Uber Eats ($n = 21$), DoorDash ($n = 5$) and Menulog ($n = 4$). Most participants ($n = 25$) placed dinner orders over the weekdays only. e total $AUD spent for one online food delivery order ranged from $AUD35 to $AUD60. Eleven participants held memberships with OFDS which enabled them to receiveTw 9.8 0 0 9.8 56.692901611 229.700809iy3692901611 229.700809iy3

Participants described their motivation to purchase comfort food on OFDS was because the foods o ered were not what they typically cooked and consumed at home. Food ordered using OFDS was regarded as highly desirable to satisfy hunger and achieve satiety, and appetite. Most participants felt the overall experience of purchasing less healthy food on OFDS was a way of feeling good.

> *"Comfort food for me is food that makes me feel good. at's tasty and that makes me happy, I guess. at's in the terms of burgers and pizza and those kinds of things". (33 years)*

> *"I am attracted towards the appeal of the food itself. So, is it looking like it's going to be tasty? Is it something that I cannot easily make at home?." (26 years).*

Individual factors: time and cost consideration

All participants perceived purchasing food using OFDS as time and cost-saving. For example, after a long day at work or during exam times, purchasing low-cost convenient food was considered a preferred alternative to spending time and e ort to preparing a home cooked meal.

> *"So, after a tiring day, it's just convenience for me, and you are just paying a small amount of money, so why not." (27 years).*

> *"I think at the time, it was the quickest and probably one of the cheaper options in terms of what I was craving that night, which was pasta." (22 years).*

Most participants perceived themselves as having average cooking skills resulting in meals they perceived as less enjoyable. ey reported that time, e ort and money spent in preparing and cooking meals and cleaning afterwards was not worth the e ort, especially if the home cooked meals were not enjoyed by themselves and their family. is prompted these participants to seek comfort food options on OFDS, the cost of which was regarded as comparable if not cheaper to home cooked food in some cases.

> *"So, I think generally I'm just not a fan of cooking.*

Environmental factors: navigating OFDS

All participants recalled a strong presence of food marketing techniques, including on the homepage, food outlet page and at the checkout page, leading to di culty in finding healthy food options and influencing their food choices. As perceived by the participants, these food marketing techniques were mostly for less healthy food options and included default placements, price promotions, high rating and reviews, low delivery fees and appealing food images. While all participants stated that they were familiar with the 'search' function on the OFDS and used it to search for 'healthy' food options on the OFDS, the limited options to choose from, low appeal, and high cost of healthy food, often deterred them from purchasing healthy food on the OFDS.

> *" ere's not really one outstanding healthy food chain. So, I ignore that and just pick something that I like." (19 years).*

> *"I don't see the healthy foods as being tasty. Also they tend to be a bit more expensive in general so we don't go for those kind of foods." (33 years).*

Participants referred to receiving push notifications or promotional emails from OFDS. ey clearly stated that while these techniques did not always trigger their immediate use of OFDS, they perceived that the pervasive nature of the promotion influenced their food purchasing decisions on OFDS.

> *"So, a lot of times I do get the push noti cations and the ones that I look out for, even screenshot, is the one with the coupon code. So, they would say, feeling hungry? Get $5 o if you purchase local businesses before this time." (31 years)*

> *"When I get push noti cations, I kind of go through, skim it, and have that email or the push noti cation in my mind. So when I am on the app, I always think about the o er I saw on the noti cation because I want to get the best o er- I'm always looking for that, all the time." (34 years)*

Many participants reflected that they looked for cost-related promotions on food items through the entire food purchase process. Participants mentioned that availability of loyalty rewards and discount o ers on food items were important factors that influenced their food choices, commonly for less healthy foods.

> *"I just look at the promotions in the front of my phone and then I can kind of just gauge whether the o er is worth my money or not. If it just matches the price of the restaurant and if I'm feeling particularly hungry, I will get it." (27 years)*

> *"I'll order from pretty much the cheapest place that I can nd, and that's why I'm usually looking for the*

One participant suggested that healthy food options could be made more prominent if third-party apps partnered more with healthy restaurants that prioritised health over profit.

> *"I guess a basic one would just be partnering with more restaurants and food groups that are healthy. And maybe they could make that a priority for the company, just to look into where the healthiest food groups are and, yeah, prioritise it a little bit more." (19 years).*

Participants stated that cost-related promotions such as discounts, deals, rewards, and free delivery on healthier food options would encourage them to make healthier food choices when ordering from OFDS.

> *"De nitely make the healthier options cheaper. If I, yeah, just because, again, as I said, price is an important consideration for me. And then, yeah, the very rst things you see should be like a popular healthy item, maybe, because that kind of in uences your thinking a little bit." (27 years)*

food choice. Robust actions are needed to enhance the accessibility, availability and desirability of healthy food options on OFDS to enable consumers make healthier food choices on OFDS.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12889-025-22839-5.

Supplementary Material 1

Supplementary Material 2

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Author contributions
AG was responsible for leading the study including research inception, study design, data analysis, manuscript writing and revisions. KB, CEH and AP contributed to the research inception, study design, and provided detailed feedback on the manuscript. RB and GL provided feedback on multiple drafts of the manuscript. All authors critically revised drafts of the manuscript and approved the final version.

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Data availability
Data is provided within the manuscript.

Declarations

Ethics approval and consent to participate
The study followed the ethical guidelines for research on human subjects as outlined in Declaration of Helsinki. The study was approved by Deakin University Human Research Ethics Committee (HEAG-H 37_2023) and all participants willingly provided written informed consent.

Consent for publication
All authors critically revised drafts of the manuscript and approved the final version.

Competing interests
The authors declare no competing interests.

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