



National Prescribing Service Limited

Information Use and Needs of Complementary Medicines Users

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Executive summary

Background

There is a growing interest worldwide in complementary and alternative medicine. Australian consumers purchase a wide range of complementary medicines (CMs) and consult a range of complementary and alternative medicine practitioners including naturopaths, acupuncturists and Chinese herbal medicine practitioners, who may also directly supply CMs.

In 2003, the Expert Committee on Complementary Medicines in the Health System was commissioned to report on the status of CMs and therapies in Australia. In the report 'Complementary Medicines in the Australian Health System',¹ the Expert Committee identified a number of concerns and made a series of recommendations to facilitate safe, appropriate and effective use of CMs. One specific concern was the need for consumers and health professionals to have 'accurate, reliable and independent information' about CMs and to have appropriate skills to 'interpret available information' and 'discriminate between reliable and unreliable information' to allow them to make informed decisions about the use of CMs.¹

National Prescribing Service complementary medicine research

The NPS CMs consumer research is part of a broader research program at NPS to better understand the use of CMs and the information needs and preferences of consumers and health professionals around CMs. The results of this work will underpin the development of strategies to address gaps in skills and provide information to assist decision-making by consumers and health professionals about CMs.

Methods

Defining complementary medicines

For the purposes of this research, CMs are also known as 'traditional or alternative medicines' and include herbal medicines, vitamin and mineral supplements, other nutritional supplements, traditional medicines such as Ayurvedic medicines and traditional Chinese medicines, homoeopathic medicines, and aromatherapy oils (where they make therapeutic claims).²

In the CMs consumer survey and interviews, the terms 'natural and herbal remedies' and 'natural medicines and health products' have been used as these terms were previously shown to be better understood by consumers than the term 'complementary medicines'.

Research questions

The research questions for this study were:

- What are the attitudes of consumers to CMs?
- How do consumers use CMs?
- Why are people using CMs?
- What do consumers know about the CMs they are using?
- What information do consumers want to know about CMs and how do they acquire that information?
- What information sources would consumers prefer to use to find out about CMs?

Research design

The research used both quantitative and qualitative methods to answer the research questions and was conducted in two phases: cross-sectional telephone surveys and in-depth interviews with a sample of survey respondents.

A computer-assisted telephone interview survey was conducted with a random sample of respondents 18 years and over across Australia. Questions focused on personal use of CMs, attitudes to CMs, CMs information seeking and preferences and socio-demographic information of respondents. Six hundred and twelve users of CMs completed the survey.

One NPS interviewer conducted 24 in-depth semi-structured interviews with a sample of CMs users identified from the telephone survey who had reported using one of the CMs of interest in the last 12 months, lived in metropolitan Sydney, Melbourne or Launceston and their level of use varied from low- to high-frequency use. Interviews were conducted in English and lasted between 30 and 60 minutes. The interview technique used open-ended interviewing and partial application of the micro-moment time-line interviewing techniques, inviting participants to tell about experiences around their use and information seeking for CMs. Nineteen interviews were used in the analysis.

Key findings

Use of complementary medicines

- CMs users reported purchasing CMs from multiple sources, including pharmacies (51%), supermarkets (33%) and health food shops (32%).
- Many consumers use CMs to enhance health, support the performance of everyday tasks and enhance their capacity to cope with unusual tasks or stressors. Some use CMs to treat or manage a condition or deficiency.
- Consumers report using some CMs for general health, to gain more energy or feel less fatigued, or for uses that are not supported by evidence. These CMs may have evidence for use with specific conditions, but consumers are not always aware of the evidence and are using the CMs for other purposes.
- Only fifty per cent of survey respondents reported having mentioned or discussed their use of CMs with a doctor.

Attitudes of consumers to complementary medicines

- Consumers think differently about CMs compared to conventional medicines, particularly prescription medicines. Many consumers saw their CMs use as 'natural' and part of a holistic view of health and CMs were used in conjunction with, not in isolation from, other strategies for achieving and maintaining good health.
- Consumers believe CMs are 'safer' than conventional medicines. While this is generally true, some consumers appear unaware that CMs may have potential harms associated with side effects, exceeding the recommended dose, allergies and interactions with conventional medicines.
- Many consumers appear satisfied with their use of CMs, although they may acknowledge that they are uncertain of their actual benefits.
- CMs users reported that their own experience is critical in assessing the safety and effectiveness of CMs. Another common way of assessing the effectiveness of CMs was discussions with family, friends, health professionals and complementary and alternative medicines practitioners.

Information needs and preferences around complementary medicines

- CMs users responding to the NPS survey most often seek information on the potential benefits (56%) and reasons for use (41%) of CMs. They less frequently seek information on side effects or risks (24%), dose (16%), and effects if taken with other medications (12%).
- The consumer in-depth interviews revealed that consumers also acquire information without actively seeking it. CMs information is communicated during informal conversations with family, friends and acquaintances about staying healthy and health problems.
- Consumers surveyed report seeking out information about CMs actively from a variety of sources. Consumers most commonly reported seeking CMs information from family and friends (55%), the Internet (51%), health food shop workers (38%), pharmacists (37%), magazines (37%), doctors/general practitioners (34%), and package inserts/labels/pamphlets (30%).
- Almost one third of CMs users (31%) also reported seeking information about CMs from one or more complementary therapists.
- The Internet was an important CMs information source, particularly for younger users and for those who used multiple CMs.
- Consumers reported finding all the sources of CMs information, including magazines, newspapers, and the Internet, as useful or very useful.
- Consumers appear to often accept and act on existing sources of information on CMs and then evaluate the effects of the CMs through trial and error.
- CMs users would prefer to get CMs information from doctors (30%), the Internet (25%) and pharmacists (24%).
- Those who used multiple CMs prefer consulting their naturopath, reading books, or consulting other natural therapists.

Implications of the research

This research provides a comprehensive picture of what Australians think about CMs, how they use CMs, how they gain information about CMs, and from whom they would prefer to receive CMs information. As with all research based on surveys and interviews, it represents the attitudes, knowledge and behaviours of those who agreed to participate.

The results raise many important issues about the attitudes of consumers to CMs and the way they use information about CMs, and how this impacts on their decisions to use these medicines. It will help us develop the approaches that are needed to address gaps in the quality use of CMs, and reveal what else we need to know to ensure that Australians are using CMs safely and effectively.

Implications for the quality use of complementary medicines

The quality use of CMs means making wise decisions that promote health or treat conditions, choosing suitable CMs when necessary, and using CMs safely and effectively. Although most CMs are safer than conventional medicines, they are still medicines and can cause side effects, allergic reactions and interact with conventional medicines. This research showed that many consumers:

- are using some complementary medicines for general wellbeing or to prevent illness despite a lack of evidence for this
- are not aware of the side effects of some CMs and their potential interaction with conventional medicines and this may put some users at unnecessary risk of harm
- do not always discuss the use of CMs with their doctors
- are reliant on sources of information about CMs that are of variable quality, reliability and authority

In order to address these gaps in the quality use of CMs, a number of approaches would be useful:

- Involvement of consumers and consumer organisations and other key stakeholders in the development of programs and strategies to improve the quality use of CMs.
- The development of strategies to disseminate messages to promote an understanding that CMs are part of a spectrum of medicines, and have the potential for harm. CMs are low risk rather than no risk, and 'natural' is not always safe.
- The provision of information to consumers about CMs that addresses their current needs and preferences.
- The promotion of active discussions between consumers and health care providers about their use of CMs.
- Investigation into the role of performance-based labelling and written consumer information in improving quality use of complementary medicines
- The availability of independent and reliable resources that would help to meet consumer information needs around CMs.

Any strategies to provide information to consumers about CMs should focus initially on areas where consumers may be at risk or may benefit from the use of CMs.

Implications for further research

The consumer research shows that many users take both CMs and conventional medicines together but view CMs as natural and safe and conventional medicines as chemical and having greater risks. Further research is needed to better understand how the use of CMs intersects with the use of conventional medicines and how to ensure that consumers balance the risks and benefits of both.

CMs users gain information about CMs from a range of resources both actively and passively. It will be important to further investigate how to best present relevant, independent and balanced CMs information to consumers and identify the skills they need to support their decisions about the use of CMs.

Another significant area for further research is to gain an understanding of the knowledge and information needs of other health care workers, including pharmacy assistants, health food store workers, naturopaths and other complementary and alternative medicine practitioners, to ensure that Australian consumers are adequately supported in their decisions around the use of CMs.

Background

The changing face of complementary medicines

Throughout the western world, the health care environment is rapidly changing and the past decade has seen increasing attention given to complementary and alternative medicines and therapies. Australian consumers can now purchase a wide range of complementary medicines (CMs) from a variety of outlets including pharmacies, supermarkets and health food shops. Many Australians also consult complementary and alternative practitioners including naturopaths, acupuncturists and Chinese herbal medicine practitioners, who may also directly supply CMs. It is estimated that Australians spent \$1.31 billion on CMs in 2004.³

There has been an increase in the use of CMs by Australians. In recent years a series of population-based surveys conducted in South Australia found 48.5% of people reported using at least one CM in the last 12 months in 1993.⁴ By 2004, 52% (n=3015) of people had reported taking one CM in the past 12 months³. A national consumer survey conducted by the National Prescribing Service (NPS) in 2005 found a similar prevalence of CMs use (52%).⁵ However, the 2006 NPS national consumer survey showed a significant increase in the proportion of people taking CMs (67%).⁶

Self-prescribed vitamins, herbal medicines and mineral supplements are the most common CMs used. The South Australian studies found an increase in the use of herbal medicines from 9.9% in 1993 to 20.6% in 2004.³ These medicines comprise a large part of the complementary medicines product market, and their popularity is reflected in other Australian surveys.^{7,8}

Review of complementary medicines in Australia

The Office for Complementary Medicines was established in 1999 within the Therapeutic Goods Administration (TGA) and it created a world first regulatory framework for CMs.^{1,9-11} In 2003, the Expert Committee on Complementary Medicines in the Health System was commissioned to report on the status of CMs and therapies in Australia. In the report 'Complementary Medicines in the Australian Health System',¹ the Expert Committee identified a number of concerns and made a series of recommendations to facilitate safe, appropriate and effective use of CMs.

The Committee identified the need for consumers and health professionals to have 'accurate, reliable and independent information' about CMs and to have appropriate skills to 'interpret available information' and 'discriminate between reliable and unreliable information' to allow them to make informed decisions about the use of CMs.¹ The lack of research about consumer and health professional CMs information needs and skills was also identified in the report. Recommendation 25 in the report recommended that "the Department of Health and Ageing commission a study to determine the complementary medicines information and skill needs of health care professionals and consumers, options for conveying this information to stakeholders, and the costs and resources necessary to meet these needs."

Why is the National Prescribing Service conducting this research?

The National Prescribing Service Ltd (NPS) is an independent, non-profit organisation funded by the Australian Government Department of Health and Ageing. NPS aims to improve quality use of medicines (QUM) in Australia by giving people information, skills and knowledge so they can choose if, when and how to use medicines to attain better health and wellbeing.⁵

The CMs consumer research is part of a broader research program at NPS to better understand the use of CMs and the information needs and preferences of consumers and health professionals around CMs. NPS conducted this research primarily to inform its own programs. This research also sought to address the research needs outlined in Recommendation 25 of the 'Complementary Medicines in the Australian Health System' report.¹

Other current and past CMs research, conducted by NPS includes:

- **Preliminary research.** The preliminary research was conducted in 2005 and 2006 and drew on a range of sources and activities, some of which were part of larger NPS activities or projects. It consisted of a review of the literature on CMs, qualitative research to understand if consumers view CMs as medicines, reviews of calls to the NPS medicines information telephone services, the inclusion of questions about CMs in NPS surveys, and a review of other relevant data.
- **Health professional CMs research.** The focus of the NPS health professional research has been on general practitioners and pharmacists as these are currently the primary audiences for all NPS work.
- **Review of electronic CMs information sources.** The review is currently underway and examines the scope and quality of CMs information resources using accepted criteria and how useful resources are to consumers and health professionals.

More information on the NPS CMs research is available at:

http://www.nps.org.au/research_and_evaluation/research/current_research/complementary_medicines

Research methods

Aim and research questions

The research aimed to provide a better understanding of current Australian consumer attitudes to CMs, and their information needs and preferences.

The research questions for the CMs consumer study were:

- What are the attitudes of consumers to CMs?
- How do consumers use CMs?
- Why are people using CMs?
- What do consumers know about the CMs they are using?
- What information do consumers want to know about CMs and how do they acquire that information?
- What information sources would consumers prefer to use to find out about CMs?

Defining complementary medicines

For the purposes of this research, CMs are also known as 'traditional or alternative medicines' and include herbal medicines, vitamin and mineral supplements, other nutritional supplements, traditional medicines such as Ayurvedic medicines and traditional Chinese medicines, homoeopathic medicines, and aromatherapy oils (where they make therapeutic claims).²

In the CMs consumer surveys and interviews the terms 'natural and herbal remedies' and 'natural medicines and health products' have been used as these terms were previously shown to be better understood by consumers than the term 'complementary medicines'.

Research design

Overview

The research used both quantitative and qualitative methods to answer the research questions and was conducted in two phases: cross-sectional telephone survey and in-depth interviews with a sample of survey respondents.

The research was approved by the Department of Health and Ageing's Health Ethics Committee.

Phase 1: Cross-sectional survey

We conducted a cross-sectional survey via telephone to gain a broad understanding of what consumers know about their CMs, where they get their information and how they would like to gain this information in the future.

Selection of survey respondents

The survey was conducted by telephone in June and July 2007, using a computer-assisted telephone interview (CATI) system, by a market research organisation with relevant experience in conducting large population health surveys. The target population for the survey was all Australians 18 years and over with a landline telephone. Random

digit dialling was used to select phone numbers to be contacted, ensuring that individuals with both listed and silent residential numbers were included.

The research organisation used a randomly generated phone number database. Features of the database included:

- the ability to draw a sample on the basis of state or postcode
- numbers that are randomly generated using complex algorithms to maximise data quality
- numbers that cover virtually all current exchange prefixes in Australia, with nearly 100% Australian coverage including new housing developments, and
- the removal of most business and non-operational numbers.

When the phone was answered, one respondent from each household was randomly selected using the CATI system and invited to participate by the interviewer. A multiple callback procedure was used to ensure that harder-to-reach respondents were included. Quality control measures were implemented to ensure reliability of the data.

Sample Size

We aimed to interview a random sample of 600 users of CMs. A sample size of 600 would have allowed us to be 95% confident that a result showing 45% of the sample population agreeing with a particular statement meant that between 41% and 49% of the whole adult population of CMs users would agree with that statement.

Survey questionnaire (See Appendix 1)

The questionnaire contained questions on:

- Personal use of CMs (9 questions)
- Attitudes to CMs (9 questions)
- Information seeking and preferences about CMs (12 questions)
- Sociodemographic information (8 questions).

The questionnaire included questions that had been used and/or validated in other surveys where available.

The survey included questions on 13 CMs of interest to NPS. The CMs of interest to NPS were those which are commonly used by Australian consumers and are associated with increased risk of side effects or interactions, or have evidence that they are effective or are not effective. They include: black cohosh, coenzyme Q10, echinacea, fish oil, ginkgo biloba, ginseng, glucosamine, St John's wort, valerian, vitamin A, vitamin B, oral vitamin E and zinc. Respondents were also asked about their use more generally of Chinese herbal medicines, homoeopathic medicine, natural weight loss products and other western herbal medicines.

The questionnaire was circulated to the Complementary Medicine Implementation Reference Group for comment. NPS staff conducted preliminary testing of the questionnaire to ensure validity. The market research organisation conducted further piloting of the questionnaire with 20 randomly selected survey respondents to ensure that questions were easily understood and question flow was logical.

Data analysis

The market research organisation provided the de-identified raw data to NPS researchers in an SPSS format. NPS researchers cleaned the data, recoded any 'other' fields and analysed the data using SAS v9.1.¹²

The NPS research team hypothesised *a priori* that the level of use of selected CMs may reflect different attitudes about CMs and different information needs and preferences. In order to examine this, CMs users were classified by the number of selected CMs used into high users (those who used 6 or more different selected CMs or used 5 or more plus consulted a complementary health practitioner in the last 12 months) and low/moderate users (those who used fewer CMs).

A post hoc subgroup analysis was also conducted by NPS researchers to understand if those who used CMs with conventional medicines (CMs–conventional medicines users) and those who used CMs alone (CMs only users) differed in their attitudes and information needs and preferences.

Univariate and bivariate analyses explored CMs use, attitudes and behaviours around CMs and CMs information seeking behaviours and preferences of all respondents, high and low/moderate CMs users, and CMs–conventional medicines users and CMs only users.

Results are expressed as percentages with 95% confidence intervals (95%CI) where relevant. Statistical differences between groups have been tested using chi square tests. A p-value of <0.01 was used to define statistical significance due to the number of tests conducted.

Phase 2: In-depth interviews

One interviewer conducted in-depth semi-structured interviews with a sample of CMs users identified from the telephone survey. This research aimed to provide a more detailed understanding of consumer attitudes to CMs, especially around safety and effectiveness of CMs, and their information seeking practices and information needs.

Selection of interview participants

The CATI system used a complex algorithm to randomly select one hundred survey respondents who had used one of the CMs of interest in the last 12 months, lived in metropolitan Sydney, Melbourne or Launceston and whose level of CMs use varied from low (used 1 selected CMs), through moderate (used 2-4 selected CMs) to high-frequency use (used > 5 selected CMs). At the end of the telephone interview, the interviewer briefly explained Phase 2 of the study to the eligible respondents identified by the CATI system. The interviewer invited them to participate in the in-depth personal interviews. Respondents were offered a \$50 Coles Myer voucher to reimburse them for their time and travel. If the respondent agreed to participate in Phase 2 of the study and gave permission to use their contact details, then the survey interviewer recorded their name and phone number in the CATI system. Each week, the market research organisation supplied a list of eligible respondents, who had agreed to participate in the interview study, to the NPS researchers. NPS researchers re-contacted these respondents by telephone within two weeks of their names being received and asked if they were still willing to participate in Phase 2 of the study and if they were available to participate during the study time frame. If they agreed to participate and were available, the NPS researcher determined a convenient time to visit them and conduct the personal interview.

An NPS researcher (MT) conducted and audio-taped the interviews in July and August 2007. Participants used a pseudonym during the interview to further ensure anonymity. Prior to the interview, the participant was given an information statement on the project and a consent form to sign if they still agreed to participate. Interviews were conducted in English either in the participant's home or at an agreed local public venue, which was convenient for the participant. Interviews lasted between 30 and 60 minutes.

The interview technique used a partial application of the micro-moment time-line interviewing techniques used in Sense-Making. The Sense-Making methodology, developed by Dervin,^{13,14} has been used extensively in the information science field to investigate how users access and use information in a variety of contexts, including health contexts, in order to inform the design of information systems.^{15,16}

The interview guide used open-ended questions, inviting participants to tell about experiences around their use and information seeking for CMs (See Appendix 2). The interviewer practiced minimal disruption during the interview, although clarifications were sought when participants offered little detail or 'closed' responses. Participants were also prompted to discuss their information needs as they discussed other aspects of CMs. The interviewer also followed up relevant issues that participants raised spontaneously; and requested that participants make comparisons between different situations. Examples of these techniques are in Table 1 below. These techniques helped to elicit additional information about the research questions during the interview.

Preliminary testing and piloting of the guide were conducted with a small convenience sample to ensure that the guide was usable and provided information relevant to the research questions.

Table 1. Interviewing techniques used to elicit additional information about complementary medicines information needs and seeking, NPS complementary medicines user in-depth interviews, 2007

Questioning technique	Examples
<p>Extension Requesting further information, or other examples Used when the participant gives little detail or a 'closed' response, the researcher probes for more information</p>	<p>"Have you sought information anywhere else other than your wife going to the Chinese doctor?" "Have you sought information about the skin rash from anywhere else, have you talked to anyone – looked on the Internet." "And so how did you originally hear that the fish oil was preventative?"</p>
<p>Linking/returning to topic Used when a participant is discussing a relevant process, event or experience but with reference to an off-topic issue, the interviewer brings the participant back to the research topic</p>	<p>"Have you ever used the Internet for health information?" "Is there anything you particularly ever wanted to know or find out to understand more about the fish oil itself?"</p>
<p>Making comparisons Used when a participant gives a particularly lucid explanation of a phenomenon, process or experience, the researcher asks them how that compares for another topic of interest. This prompts them to give a similarly detailed explanation</p>	<p>"So tell me [name], how do you find out information about natural medicines like the fish oil that you do take?"</p>

Analysis method

The analytical method employed for the analysis of the in-depth interview data is based on Miles and Huberman's techniques for early steps in the thematic analysis and presentation of data,¹⁷ Taylor and Bedford's variation for identifying themes in the data and intersections between the themes,¹⁸ and Bazeley's techniques for refining themes and for using displays in analysis and reporting of results.¹⁹ This method parallels grounded theoretical methods of open and axial coding.²⁰ However, unlike traditional grounded theoretical method, no attempt was made to generate new theories from their data.

In-depth interviews were transcribed verbatim, with the exception of personal information, which was de-identified. Transcripts were imported into the qualitative data software program NVivo 7²¹ for project management, data organisation and analysis. A different NPS researcher analysed and reported on the data. The NPS researchers met on a number of occasions during data analysis to discuss new codes to ensure data validity and methodological rigour.

Figure 1 illustrates the steps taken in the analytical process, which are described in the following sections. In practice, these steps were undertaken concurrently, as new themes can and did emerge at every stage of the project. For example, while conducting confirmatory coding of identified themes, new themes emerged. 'In Vivo' nodes^a would be created for these new themes so that they could be re-visited at a later time.

The analytical method involved both descriptive and higher order analyses. Descriptive analysis in this sense means analysis of answers participants gave as direct responses to questions asked by the interviewer. They can be found in the analysis of individual cases (within-case analyses), as well as when analysing across cases (between-case analyses). Given the circular nature of this kind of qualitative method, results are presented and discussed thematically rather than as results of discreet analytical phases.

^a 'In Vivo' coding is an NVivo7 procedure where nodes are created from the data verbatim. It is essentially a 'drag and drop' way of creating new nodes and is useful when interesting findings are made when in the middle of another task that cannot be interrupted.

Approaching the data: Annotation

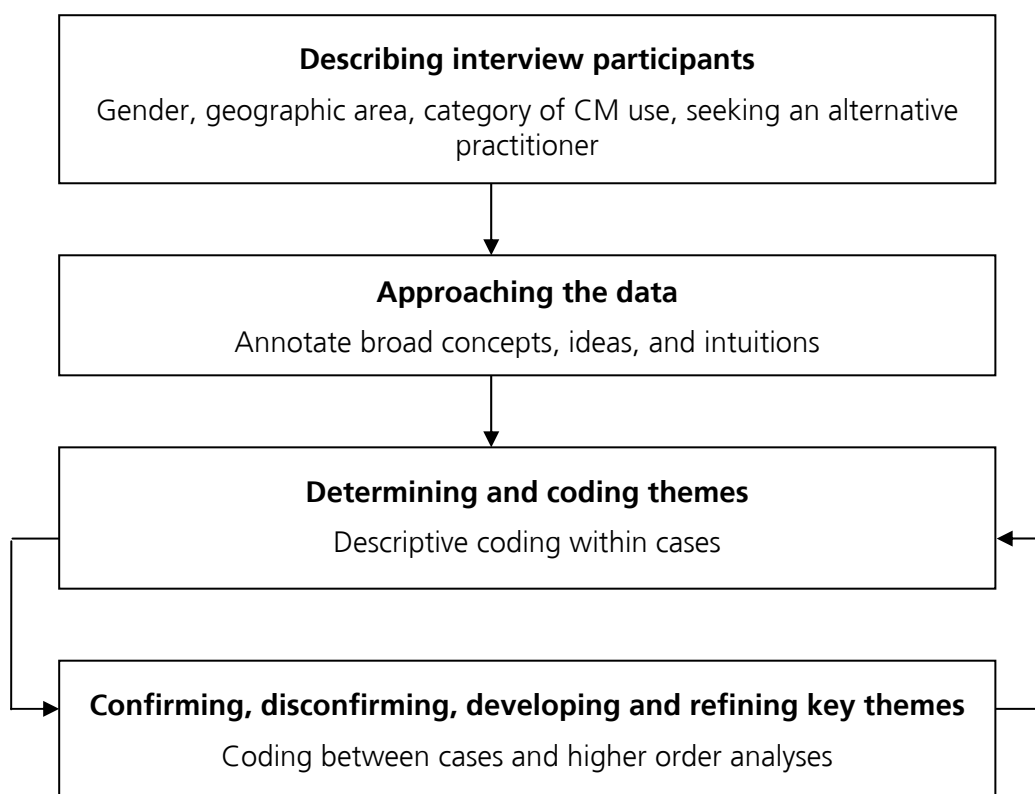
Transcripts were initially annotated broadly to familiarise the researcher with the data. The questions asked of the data to guide annotating included:

- What people, events or situations were described?
- What were the main themes or issues raised by the participant?
- Which research questions and which variables in the initial framework does the data address?
- What new ideas, speculations, impressions or hunches about the research topics are suggested by the interview?
- What should I focus on when annotating the next interview?¹⁷

Answers to these questions informed the order in which annotation proceeded. For example, the issues for a respondent who is juggling two jobs and a young family may be very different from those of an older retired participant with no resident children. Thus, annotation of interviews sought to reveal the diversity of the information from the respondents: each interview was selected to yield very different initial ideas to the previously annotated interview.

The annotation process also initiated the coding framework. Building a coding framework via this method, rather than pre-designing it around the research questions, avoided 'forcing' the data.

Figure 1. Overview of the in-depth interview analytical process



Determination and coding of themes

Themes were inferred from the annotated material and coded within cases, i.e. individual transcripts were coded in their entirety with the intention of identifying the widest possible range of themes.

Data was coded in such a way as to preserve meaning (such as larger paragraphs, rather than small selections of particular words) this also enabled multiple coding of text. This meant that exploration of thematic intersections would be possible at later stages of the analysis.¹⁹

A team meeting was held when a sizeable number of codes had been developed to discuss interim findings, how they answered the research questions and which divergent themes were important to accommodate in the study to contribute to the broader body of CMs knowledge. Further coding of new themes and 'coding on' of existing themes followed. Codes were repeatedly reviewed and refined in this way to challenge analytical conclusions, generate new approaches when analytical techniques were not working and to maintain transparency of the analytical process so that it could be checked by others. This process aimed to confirm the 'trustworthiness' of the coding and analysis process.

Confirmatory analyses and development of emergent key themes

The same theme was coded across transcripts (between-case coding) to confirm emergent themes from the first stage of analysis. All transcripts were examined for evidence of new themes. Team meetings and writing progressive results formed important components of this stage of the analysis.

This stage of the analysis focuses on developing and refining hierarchical categories. This involves reviewing emergent ideas of what is 'going on in the data' as a project team and confirming or refuting the themes within the data. This often led to the identification, development and/or refinement of other themes.

Intersectional analyses were performed in NVivo by conducting matrix queries.¹⁹

Results: Cross-sectional survey of complementary medicine users

Study Population

Response rate

A total of 947 people agreed to participate in the survey. The overall response rate for the survey was 42%.

Respondents were initially asked the following question to assess whether they were complementary medicine users: 'Which of the following CMs have you used in the last 12 months'.

Table 2 presents the categories of CMs used and the number and proportion of the respondents using each category of these CMs. The five most common responses were: vitamins not prescribed by a doctor (46.3%) followed by other natural medicines from fish or animals (29.5%), herbal teas (29.1%), mineral supplements not prescribed by a doctor (26.3%) and other herbal medicines (19.4%).

Table 2. Complementary medicines used in the last 12 months, NPS Complementary Medicines Consumer Survey, 2007

Categories of complementary medicines ^a	Number of respondents (n=947)	% (95% CI)	
Vitamins not prescribed by a doctor	438	46.3	(43.1–49.4)
Other natural medicines from fish or animals	279	29.5	(26.6–32.4)
Herbal teas	276	29.1	(26.3–32.0)
Mineral supplements not prescribed by a doctor	249	26.3	(23.5–29.1)
Other herbal medicines	184	19.4	(16.9–21.9)
Aromatherapy oils for medicinal purposes	147	15.5	(13.2–17.8)
Vitamins prescribed by a doctor	71	7.5	(5.8–9.2)
Homoeopathic medicines	67	7.1	(5.4–8.7)
Mineral supplements prescribed by a doctor	61	6.4	(4.9–8.0)
Chinese traditional medicines	54	5.7	(4.2–7.2)
Indigenous or other traditional medicines	21	2.2	(1.3–3.2)
Any other natural medicines	19	2.0	(1.1–2.9)
Soy-based medicines	12	1.3	(0.6–2.0)
No CMs used	270	28.5	(25.6–31.4)

NB: Multiple responses allowed

^a Categories based on TGA definition of complementary medicines and work by MacLennan et al^{2,3,10}

Complementary medicine users

Based on the answer to the question above, 335 (35.4%) respondents were excluded from the study because they had not used any CMs in the last 12 months, only used vitamins or minerals prescribed by their GP or only used herbal teas. The remaining 612 (64.6%) respondents were considered to be 'complementary medicines users' and completed the survey.

The characteristics of the 612 CMs users who completed the survey were compared with the Australian population²² in Table 3. CMs use is more likely among Australian women. There were no other statistically significant differences between the demographics of the survey respondents and the Australian population, except for language spoken at home. More users reported their health to be excellent or very good, although this was not statistically significant (Table 4).

Table 3. Characteristics of the complementary medicines users compared to Australian population, NPS Complementary Medicines Consumer Survey, 2007

Socio-demographic characteristics	CMs users NPS CMs survey 2007 (n=612) %	Australian population ABS census 2006 (n=19,855,288) %
Gender		
Male	32.4	49.4
Female	67.6	50.6
Age (years)		
18–24	7.2	12.4
25–34	16.0	17.7
35–44	22.4	19.5
45–54	19.9	18.3
55–64	16.8	14.5
65+	17.7	17.5
Region		
New South Wales	31.4	33.0
Victoria	23.9	24.8
Queensland	19.3	19.7
South Australia	7.7	7.6
Western Australia	9.6	9.9
Tasmania	5.6	2.4
Northern Territory	1.0	1.0
Australian Capital Territory	1.6	1.6
Postsecondary education		
No	43.5	47.5
Yes	56.5	52.5
Employment		
Employed	63.2	61.2
Unemployed/not in labour force	36.8	38.8
Language spoken at home		
English	90.7	78.5
Other	9.3	21.5
Country of birth		
Australia	73.5	70.9
Overseas	26.5	29.1

Table 4. Self-reported health of the complementary medicines users compared to Australian population, NPS Complementary Medicines Consumer Survey, 2007

Self-reported health	CMs Users NPS CMs survey 2007 (n=612) %	Australian population 2004 AIHW ²³ %
Excellent	21.5	17.7
Very Good	39.5	32.6
Good	28.7	30.9
Fair	7.5	13.8
Poor	2.8	5.0

Complementary therapists

Of the 612 respondents who completed the survey, 40% of respondents reported that they had visited a natural or complementary therapist in the last 12 months (Table 5). The most commonly visited therapists were chiropractors (15.7%), naturopaths or western herbalists (13.2%) and acupuncturists (8.3%).

Table 5. Complementary therapists visited in the last 12 months, NPS Complementary Medicines Consumer Survey, 2007

Type of therapist	Number of respondents (n=612)	All users % (95% CI)	
None	363	59.3	(55.4–63.2)
Chiropractor	96	15.7	(12.8–18.6)
Naturopath/western herbalist	81	13.2	(10.6–15.9)
Acupuncturist	51	8.3	(6.1–10.5)
Osteopath	37	6.0	(4.2–7.9)
Homoeopath	34	5.6	(3.7–7.4)
Other traditional medicine practitioner	31	5.1	(3.3–6.8)
Reflexologist	30	4.9	(3.2–6.6)
Traditional Chinese medicine practitioner	25	4.1	(2.5–5.7)
Massage or Bowen therapist	20	3.3	(1.9–4.7)
Aromatherapist	16	2.6	(1.4–3.9)
Iridologist	14	2.3	(1.1–3.5)
Other natural therapist	9	1.5	(0.5–2.4)
Don't know/refused	3	0.5	(0.1–1.4)

Personal use of complementary medicines

Use of selected complementary medicines

The respondents were asked about their use of 13 specific CMs and 4 groupings of CMs in the last 12 months, how often they used them and the purpose for which they were used.

The vast majority of users (85%) had taken at least one of these products in the last 12 months. The five most common selected CMs taken were fish oil (48.9%), vitamin B (39.1%), zinc (27.8%), glucosamine (27.0%) and vitamin E (24.3%). Black cohosh (2.5%), coenzyme Q10 (3.4%), natural weight loss products (4.2%), valerian (6.7%) and St John's wort (7.7%) were the CMs used least commonly by respondents (Table 6).

Over half of all respondents started using CMs over five years ago (Table 7).

Table 6. Selected CMs used in last 12 months, NPS Complementary Medicines Consumer Survey, 2007

Selected CMs	Number of respondents (n=612)	% (95%CI)	
		%	(95%CI)
Fish oil	299	48.9	(44.9–52.8)
Vitamin B	239	39.1	(35.2–42.9)
Other western herbal medicines	197	32.2	(28.5–35.9)
Zinc	170	27.8	(24.2–31.3)
Glucosamine	165	27.0	(23.4–30.5)
Vitamin E (oral)	149	24.3	(20.9–27.7)
Vitamin A	127	20.8	(17.5–24.0)
Echinacea	125	20.4	(17.2–23.6)
Homoeopathic medicines	73	11.9	(9.4–14.5)
Ginkgo biloba	70	11.4	(8.9–14.0)
Chinese herbal medicines	65	10.6	(8.2–13.1)
Ginseng	64	10.5	(8.0–12.9)
St John's wort	47	7.7	(5.6–9.8)
Valerian	41	6.7	(4.7–8.7)
Natural weight loss products	26	4.2	(2.7–5.8)
Coenzyme Q10	21	3.4	(2.0–4.9)
Black cohosh	15	2.5	(1.2–3.7)
None of these	91	14.9	(12.1–17.7)
Don't know/refused	5	0.8	(0.1–1.5)

NB: Multiple responses allowed

Table 7. Length of time complementary medicines have been used, NPS Complementary Medicines Consumer Survey, 2007

Length of time CMs have been used	% (n=612)
Less than a year	12.4
1 to 2 years	16.3
3 to 5 years	16.0
Over 5 years	54.1
Don't know/refused	1.1

Sixty percent of users of glucosamine, fish oil, coenzyme Q10, vitamins A, B and E, and zinc took these products all of the time or most of the time (Table 8). More than half of the users of Chinese herbal medicines, echinacea and homoeopathic medicines used these CMs occasionally for specific conditions. St John's wort was most often taken sometimes for specific conditions (44.7%) or occasionally (38.3%).

Table 8. How often selected CMs were used, NPS Complementary Medicines Consumer Survey, 2007

Selected CMs	Number of respondents (n=516)	All of the time %	Most of the time %	Sometimes for specific conditions %	Occasionally %
Black cohosh	15	33.3	13.3	20.0	26.7
Chinese herbal medicines	65	7.7	4.6	55.4	24.6
Coenzyme Q10	21	47.6	14.3	19.0	19.0
Echinacea	125	4.8	2.4	56.0	36.8
Fish oil	299	50.2	15.4	14.4	19.7
Ginkgo biloba	70	28.6	7.1	27.1	35.7
Ginseng	64	21.9	6.3	29.7	42.2
Glucosamine	165	63.6	9.1	17.0	10.3
Homoeopathic medicines	73	13.7	9.6	53.4	20.5
'Natural' weight loss products	26	23.1	15.4	34.6	26.9
Other western herbal medicines	197	22.3	7.6	33.0	26.4
St John's wort	47	10.6	4.3	44.7	38.3
Valerian	41	7.3	0.0	43.9	46.3
Vitamin A	127	55.9	15.7	6.3	21.3
Vitamin B	239	47.3	18.0	17.6	16.7
Vitamin E (oral)	149	48.3	16.1	12.8	20.8
Zinc	170	44.1	15.3	18.8	21.2

Where are complementary medicines purchased?

CMs were most commonly purchased in pharmacies (51.3%), supermarkets (32.5%) or health food shops (32.2%) (Table 9).

Table 9. Place where CMs purchased, NPS Complementary Medicines Consumer Survey, 2007

Place of purchase	% (n=612)
Pharmacy	51.3
Supermarket	32.5
Health food shop	32.2
Natural health practitioner / clinic	12.9
Direct mail order / supplier / distributor	4.1
Other	4.7
Don't know	1.3

NB: Multiple responses allowed

Use of complementary medicines with other medicines

Almost half of the respondents stated that they had used CMs with prescription medicine on the same day (46.9%) and a similar proportion (51.1%) stated that they had used them along with other over-the-counter medicines. Around two-thirds of CMs users had used a complementary medicine on the same day as having either a prescription medication and/or an over-the-counter medicine.

Respondents who used CMs with either a prescription medicine or an over-the-counter medicine on the same day (referred to in this report as CMs–conventional medicines users) differed from those who did not use CMs with these other medicines (CMs only users) in the following ways:

- CMs–conventional medicines users were more likely to be female (75% vs. 55%, $p < 0.001$) than CMs only users.
- Although not statistically significant, more CMs–conventional medicines users reported fair or poor health (13% vs. 6%, $p = 0.018$) compared to CMs only users.
- One-third of CMs–conventional medicines users were high users of CMs (i.e. used five or more CMs), while only around 20% of CMs only users were high CMs users.
- CMs–conventional medicines users and CMs only users had similar perceptions for three of the four safety questions asked. More CMs–conventional medicines users agreed or strongly agreed that CMs can 'cause dangerous side effects' than CMs only users (45% vs. 34%, $p < 0.01$).
- CMs–conventional medicines users also sought information about CMs more frequently than CMs only users (53% vs. 35%, $p < 0.001$) and more often reported looking for information about risks and side effects (28% vs. 16%, $p < 0.01$).
- More CMs–conventional medicine users reported seeking information from conventional health professionals: doctors (38% vs. 24%, $p < 0.01$); pharmacists (42% vs. 26%, $p < 0.01$) and pharmacy assistants (26% vs. 12%, $p = 0.001$) than CMs only users.

Discussing the use of complementary medicines with a doctor

Only 50% of respondents reported having mentioned or discussed their use of CMs with a doctor. The majority of respondents (86.8%) stated that they were either very or somewhat confident discussing CMs with their local doctor or GP (Figure 2).

Figure 2. Confidence in discussing complementary medicines with GPs, NPS Complementary Medicines Consumer Survey, 2007 (n=612)



What users know about the complementary medicines they were using

The survey asked users about the reasons or conditions for which they used selected CMs. General health was a common reason for using many of the selected CMs: coenzyme Q10 (42.9%); echinacea (50.4%); fish oil (47.2%); ginkgo biloba (42.9%); ginseng (71.9%); vitamin A (78.7%); oral vitamin E (73.2%); and zinc (61.2%). Many CMs users gave specific reasons for using their CMs. Most users were taking CMs for conditions where there is some evidence to support their use. See Table 10 for details about the reasons for the use of selected CMs.

Around 70% of people using black cohosh, 54% of people using ginkgo biloba and 55% of people using echinacea reported using them for reasons where there is some evidence. However, 18% to 50% of people reported using these three CMs for general health, or for reasons where there is no evidence, or that they were uncertain about the reasons for their use.

**Table 10. Reasons for the use of selected complementary medicines, NPS
Complementary Medicines Consumer Survey, 2007**

Selected CMs	Respondents using the CMs for a condition where there is some evidence that it may be of benefit %	Respondents using the CMs for conditions, where there is no evidence for its use %	Respondents using the CMs for general health %	Respondents unsure why they were taking the CMs - %
Black cohosh	Hormonal (73.3%)	0%	26.7%	0%
Coenzyme Q10	Blood thinning/heart circulation (28.6%)	Brain function (4.8%) Respiratory (4.8%)	42.9%	14.3%
Echinacea	Respiratory (40.8%); Immune system/Infection (15.2%)	Muscles, joints or bones (0.8%)	50.4%	3.2%
Fish oil	Muscles, joints or bones (33.1%); Blood thinning/heart circulation (10.4%); Cholesterol (7.4%); Brain function (6.4%); Skin condition (6.4%); Dietary supplement (5.4%); Respiratory (2.0%); Immune system/infection (2.0%); Mental health (1.7%); Blood pressure (1.7%); Hormonal (1.3%); Gastrointestinal (1.0%); Pregnancy (0.7%); Eyes (0.7%)	Weight loss or detox (0.3%); Anti-cancer (0.3%); Other (0.3%)	47.2%	1.3%
Ginkgo biloba	Brain function (42.9%); Blood thinning/heart circulation (10.0%); Mental health (1.4%)	Muscles, joints or bones (4.3%); Immune system/infection (1.4%); Sleeping/insomnia (1.4%)	42.9%	10.0%
Ginseng	Brain function (6.3%); Immune system/infection (3.1%); Mental health (1.6%)	Muscles, joints or bones (1.6%); Respiratory (4.7%); Dietary supplement (4.7%); Gastrointestinal (3.1%); Pregnancy (1.6%);	71.9%	9.3%
Glucosamine	Muscles, joints or bones (90.3%)	Respiratory (1.8%); Immune system/infection (1.2%); Gastro-intestinal (0.6%); Hormonal (0.6%); Mental health(0.6%); Other (0.6%)	7.3%	3.6%
St John's wort	Mental health (70.2%); Sleeping/insomnia (8.5%); Hormonal (6.4%); Stress/relaxation (4.3%)	Blood thinning/heart circulation (2.1%); Brain function (2.1%); Gastro-intestinal (2.1%); Other (2.1%)	10.6%	8.5%
Valerian	Sleeping/insomnia (63.4%); Mental health (12.2%); Stress/relaxation (7.3%); Muscles, joints or bones (2.4%)	Respiratory (9.8%); Blood thinning/heart circulation (2.4%); Other (9.8%)	9.8%	7.3%
Vitamin A	Skin condition (6.3%); Dietary supplement (5.5%); Immune system/infection (4.7%); Respiratory (3.9%); Pregnancy (1.6%); Eyes (0.8%)	Muscles, joints or bones (2.4%); Blood thinning/heart circulation (0.8%); Blood pressure (0.8%); Gastrointestinal (0.8%) Hormonal (0.8%); Weight loss or detox (0.8%); Other (0.8%)	78.7%	5.5%

Table 10 (continued). Reasons for the use of selected CMs, NPS Complementary Medicines Consumer Survey, 2007

Selected CMs	Respondents using the CMs for a condition where there is some evidence that it may be of benefit %	Respondents using the CMs for conditions, where there is no evidence for its use %	Respondents using the CMs for general health %	Respondents unsure why they were taking the CMs %
Vitamin E (oral)	Skin condition (10.7%); Blood thinning/heart circulation (8.7%); Dietary supplement (5.4%);	Immune system/infection (4.0%); Respiratory (2.7%); Pregnancy (2.7%); Hormonal (1.3%); Muscles, joints or bones (0.7%); Blood pressure (0.7%); Mental health (0.7%); Stress/relaxation (0.7%); Other (2.0%)	73.2%	4.1%
Zinc	Skin condition (14.1%); Dietary supplement (10.0%); Immune system/infection (7.7%); Respiratory (4.7%); Pregnancy (3.5%); Muscles, joints or bones (1.8%); Prostate (1.2%); Hormonal (0.6%); Eyes (0.6%)	Brain function (0.6%); Mental health (0.6%); Weight loss or detox (0.6%); Other (5.9%)	61.2%	3.5%

Attitudes to complementary medicines

In order to better understand user attitudes to CMs, respondents were asked questions about the advantages and disadvantages of CMs. They were also read five statements – four of which were about the safety of CMs – and asked whether they agreed or disagreed with each.

Most users actively used CMs. When read the following statement 'I only use natural medicines and health products as a last resort', 71.1% of respondents disagreed or strongly disagreed with this statement, 20.5% agreed or strongly agreed and 7.2% neither agreed or disagreed.

Advantages and disadvantages of using complementary medicines

Respondents were asked what they thought the main advantages and disadvantages of using natural medicines and health products were. The five most common advantages of using CMs were: 'natural', better than taking drugs/fewer chemicals, effective/seems to work/helps general health and wellbeing and not many side effects/gentle for the body (Table 11). Only three percent of respondents thought that CMs had no advantages.

Table 11. Advantages of complementary medicines, NPS Complementary Medicines Consumer Survey, 2007

Advantages of CMs	Users reporting CMs advantage % (n=612)
Natural	33.0
Better than taking drugs/fewer chemicals	28.6
Effective/seem to work/helps	24.3
General health and wellbeing	24.0
Not many side effects/gentle for the body	16.8
An alternative to pharmaceuticals	12.7
Preventative health/holistic health	9.3
Safe	7.7
Boosts immune system/resistance	7.7
Cheaper	4.6
Can complement/supplement prescription medication	3.8
None	3.1
Other ^a	9.4
Don't know/refused	6.0

NB: Multiple responses allowed

^a Other includes nutrient/diet supplement (2.1%), not addictive (2.1%), been around for years (2.1%)

Thirty percent of respondents reported that CMs have no disadvantages. The five most common disadvantages that were reported were: they were expensive (18.6%), lacked research/not clinically tested/no warnings (12.1%), lack of efficacy/not sure it will work/less effective/placebo effect (10.5%), not enough information (9.8%) and they take longer to work (7.7%) (Table 12).

Table 12. Disadvantages of complementary medicines, NPS Complementary Medicines Consumer Survey, 2007

Disadvantage of CMs	Users reporting CMs disadvantage % (n=612)
None	29.9
Expensive	18.6
Lack of research/not clinically tested/no warnings	12.1
Lack of efficacy/not sure it will work/less effective/placebo effect	10.5
Not enough information/don't know what you are getting	9.8
Take longer to work	7.7
Not prescribed properly by a practitioner	5.2
Problems mixing with other medicines	4.7
Side effects/allergies	2.9
Other ^a	11.0
Don't know/refused	10.8

NB: Multiple responses allowed

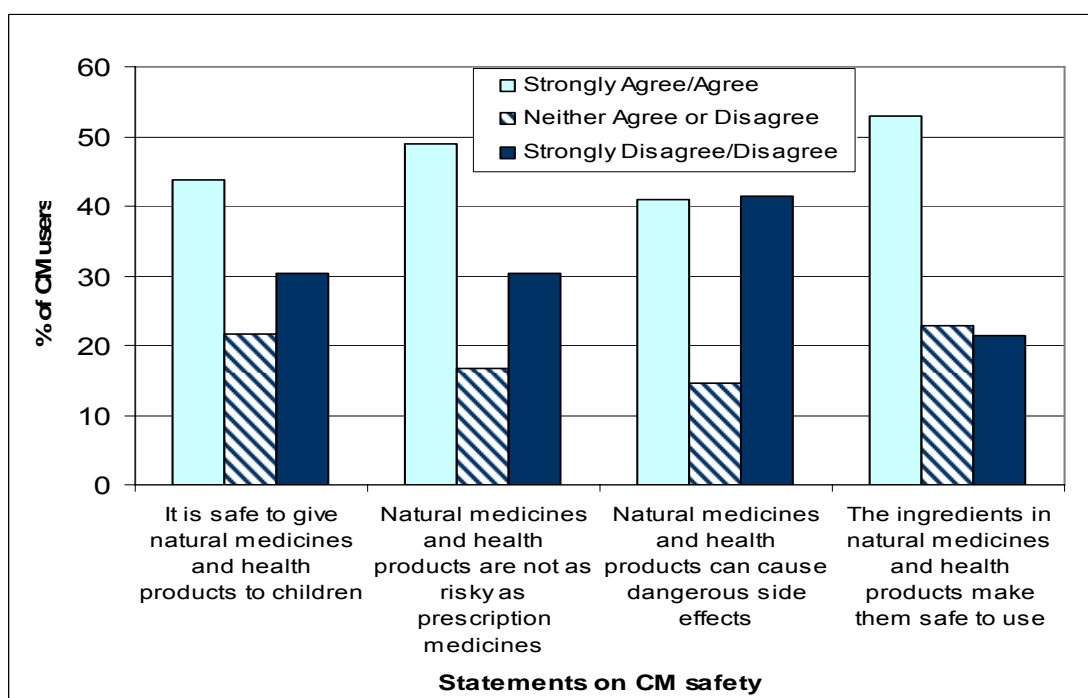
^a Other includes self medication issues - e.g. dosage, overuse and adherence (2.6%), lack of availability (2.1%), been around for years (2.1%)

Perceptions of the safety of complementary medicines

Consumers appear to have a limited knowledge of the risks of CMs, and their interactions with other medicines. When asked what the disadvantages of CMs were, only 3% of CMs users reported side effects and 5% mentioned 'problems mixing with other medicines' (Table 12).

Conversely, when directly asked about their perceptions of the safety of CMs over 40% of CMs users supported statements about CMs being 'risky' or having dangerous side effects and 15% to 20% were uncertain (Figure 3). More than 40% of CMs users thought CMs were safe to give to children and almost half thought that CMs were less risky than prescription medicines.

Figure 3. Perceptions of the safety of complementary medicines, NPS Complementary Medicines Consumers Survey 2007



Perceptions about testing of complementary medicines

More than half of respondents (52%) thought that CMs were independently tested by a government agency such as the TGA. Of those who thought they were tested, one-quarter thought they were tested for quality, three-quarters thought they were tested for safety, and one-third thought they were tested for efficacy or for what they claim to do (Table 13).

Table 13. Perceptions about the types of tests conducted on complementary medicines, NPS Complementary Medicines Consumer Survey, 2007

Type of tests	Respondents who thought CMs were tested	
	Number (n=318)	% (95%CI)
Quality	85	26.4 (21.6-31.2)
Safety, side effects	239	74.2 (69.4-79.0)
Effectiveness/efficacy/effect	100	31.1 (26.0-36.1)
Strength	28	8.7 (5.6-11.8)
That they do what they claim to do	65	20.2 (15.8-24.6)
Other	5	1.6 (0.2-2.9)
Don't know	20	6.2 (3.6-8.8)

NB: Multiple responses allowed

Consumer information seeking about complementary medicines

Over 70% of CMs users surveyed had looked for information on CMs in the last 12 months and 46% looked every few months or more frequently (Table 14).

Table 14. How often information was sought on CMs, NPS Complementary Medicines Consumer Survey, 2007

How often respondents looked for information on complementary medicines in the last 12 months	% (n=612)
Every day	1.6
Several times a week	4.3
Several times a month	11.4
Every few months	28.9
Less often	26.1
Never	27.5

Type of complementary medicines information looked for

Of the respondents who looked for information, the most common aspects of information they wanted were: benefits (56.4%), reason for use (41.1%), side effects or risks (24.2%), dose, e.g. how much or how often to take it (15.6%), and effects if taken with other medicines (11.5%) (Table 15).

Table 15. Type of complementary medicines information sought by consumers, NPS Complementary Medicines Consumer Survey, 2007

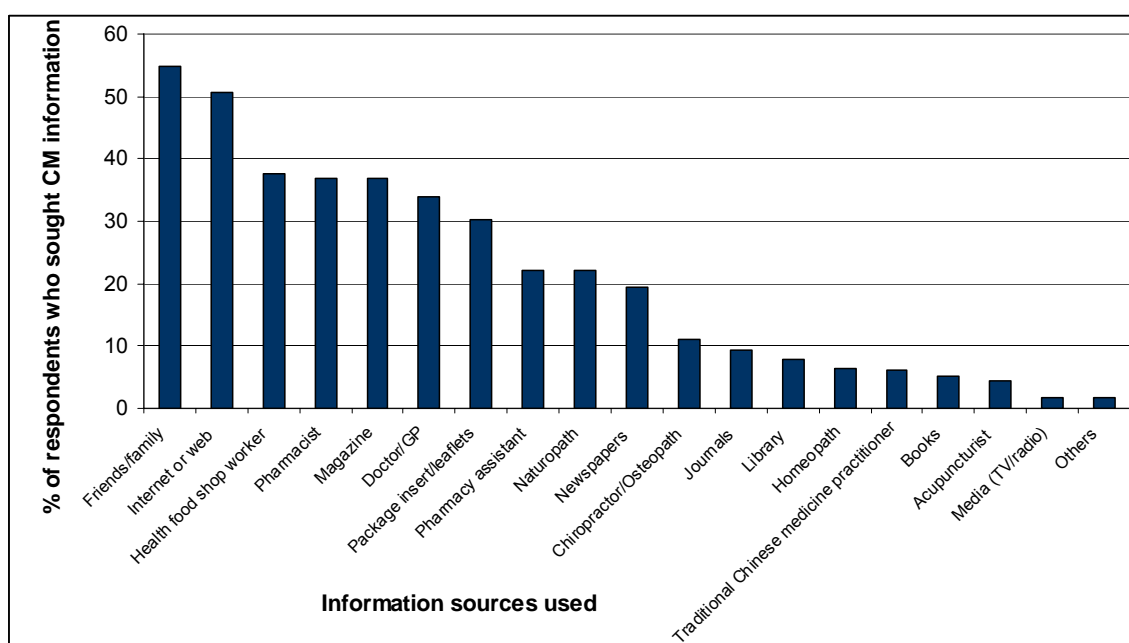
What users wanted to find out about CMs	% (n=612)
Benefits	56.4
Reason for use	41.1
Side effects or risks	24.2
Dose	15.6
Effects if taken with other medicines	11.5
What CM product to use – specific condition/symptoms	6.8
General information on CMs	5.0
Effectiveness/efficacy of CM product	3.4
Cost	2.9
New CM products and their availability	2.9
Use in children	2.7
Use in pregnancy	2.7

NB: Multiple responses allowed

Sources of complementary medicines information used

The most commonly reported information sources used by CMs users were family and friends (54.9%), the Internet (50.6%), health food shop worker (37.7%), pharmacist (37.0%), magazines (36.8%), doctor/general practitioner (33.9%), and package insert/label/pamphlets (30.3%) (Figure 4). Thirty-one percent of CMs users reported seeking information about CMs from a range of complementary therapists including: naturopaths/western herbalists (22.1%); chiropractors/osteopaths (11.1%); homeopaths (6.5%), Chinese medicine practitioners (6.1%); and acupuncturists (4.5%). Although magazines were a common source of information, TV and radio media were rarely mentioned (1.6%).

Figure 4. Sources of complementary medicines resources used by respondents, NPS Complementary Medicines Consumer Survey, 2007



When questioned about how useful they found the CMs information resources they used, most CMs users rated these sources as very or fairly useful. This included magazines, newspapers, and the Internet (Table 16). Advice from natural therapists was rated very highly. The resources where at least 50% of users found them 'very' useful were: naturopath/western herbalists (74.5%), books (73.9%), homoeopaths (69.0%), acupuncturists (65.0%), journals (61.0%), chiropractors/osteopaths (59.2%), the Internet (51.3%) and pharmacists (50.6%).

**Table 16. Perceived usefulness of complementary medicines information sources,
NPS Complementary Medicines Consumer Survey, 2007**

Information source	Number of respondents using the resource (n=443)	Very useful %	Fairly useful %	Somewhat useful %	Not useful %	Don't know %
Friends/family	243	36.6	35.8	24.3	2.9	0.4
Internet or web	224	51.3	28.1	14.3	5.8	0.4
Health food shop worker	167	43.7	35.3	18.0	3.0	0.0
Pharmacist	164	50.6	28.0	17.1	3.6	0.6
Magazine	163	23.3	41.1	30.7	4.9	0.0
Doctor/GP	150	47.3	30.0	15.3	6.7	0.7
Package insert / label / leaflets / pamphlets	134	38.1	36.6	20.1	5.2	0.0
Pharmacy assistant	98	33.7	31.6	27.6	7.1	0.0
Naturopath/western herbalist	98	74.5	18.4	6.1	0.0	1.0
Newspapers	86	22.1	36.0	32.6	9.3	0.0
Chiropractor/osteopath	49	59.2	30.6	8.2	2.0	0.0
Journals	41	61.0	19.5	17.1	0.0	2.4
Library	35	42.9	34.3	17.1	5.7	0.0
Homoeopath	29	69.0	17.2	13.8	0.0	0.0
Traditional Chinese medicine practitioner	20	81.5	7.4	11.1	0.0	0.0
Books	23	73.9	21.7	0.0	4.3	0.0
Acupuncturist	20	65.0	20.0	10.0	0.0	5.0
Media (TV/radio)	7	42.9	28.6	14.3	14.3	0.0

The Internet as an information source for complementary medicines

Over 50% of CMs users had sought information via the Internet about CMs in the last 12 months. Of these, 26% had used it several times a month or more frequently (Table 17).

Table 17. How often information was sought on complementary medicines on the Internet, complementary medicines users who sought information in the last 12 months, NPS Complementary Medicines Consumer Survey, 2007

How often respondents looked for information on complementary medicines on the Internet in the last 12 months	% (n=223)
Every day	2.7
Several times a week	5.4
Several times a month	17.9
Every few months	47.1
Less often	26.5
Don't know	0.5

Seven percent (15 respondents) of Internet users reported using a favourite CMs site. Most sites reported as favourites for information on CMs were industry sponsored sites. These included: ABC Health and Wellbeing (1), Bionaturals (1), Blackmores (3), Dr Mercola (1), Herbal Life (1), ION LIFE (1), Natural Medicines Online (1), Neways (1), Ninemsn (1), Cochrane Collaboration (1), WebMD (1), and Wikipedia (2). The rest of the respondents reported using multiple Internet sites.

Only about 6% of respondents who used the Internet thought that they could trust all of the information they found. Around 30% thought that most information could be trusted and 27% thought that half the information could be trusted (Table 18).

Table 18. Trustworthiness of Internet information on complementary medicines, NPS Complementary Medicines Consumer Survey, 2007

Amount of complementary medicines information on the Internet that users trust	% (n=223)
All	5.8
Most	31.4
About half	27.4
Some	31.8
None at all	1.4
Don't know	2.2

Respondents who used the Internet to find information on CMs were more likely to be younger, have post-secondary education and be employed than those who didn't use the Internet for this purpose (Table 19).

Table 19. Characteristics of respondents according to their use of the Internet to find complementary medicines information, NPS Complementary Medicines Consumer Survey, 2007

Respondent characteristics	Used the Internet to find CMs information (n=224) %	Did NOT use Internet to find CMs information (n=219) %
Gender		
Male	27.7	26.9
Female	72.3	73.1
Age (years)**		
18–24	11.2	1.8
25–34	19.2	11.4
35–44	28.6	20.6
45–54	25.5	18.3
55–64	12.1	21.9
65+	3.6	26.0
Self-reported health		
Excellent	24.7	17.9
Very good	40.8	41.7
Good	26.9	28.0
Fair	5.8	9.6
Poor	1.8	2.8
Country of birth		
Australia	72.3	76.7
Overseas	27.7	23.3
Postsecondary Education**		
No	29.9	49.1
Yes	70.1	50.9
Employment**		
Employed	75.0	56.0
Unemployed/not in the labour force	25.0	44.0
Language spoken at home		
English	88.0	94.1
Other	12.0	5.9

NB: Difference between Internet users and non-users: *p<0.01; **p<0.001.

Preferred sources of complementary medicines information

Overall, CMs users most often reported doctors, the Internet and pharmacists as their *preferred* sources of information. Table 20 provides a full list of CMs user preferences for information sources.

Although almost 30% of CMs users used labels, package inserts and pamphlets for information about CMs in the last 12 months, only a very small proportion (7%) preferred these as a source of CMs information.

Table 20. Preferred sources of information, NPS Complementary Medicines Consumer Survey 2007

Where users prefer to get their information	% (n=612)
Doctor	27.8
Internet/website	25.2
Pharmacist	24.0
Health food shop worker	14.2
Naturopath	12.4
Magazine articles	10.1
Family/friends	8.3
Book	7.2
Pamphlet/package inserts/booklet	6.9
Pharmacy assistant	3.3
Television and radio programs	3.1
Other traditional medicine practitioner	2.9
Traditional Chinese medicine practitioner/Chinese herbalist	2.3
Newspaper	1.8
Chiropractor	1.6
Library/medical journal	1.6
Other	8.3

NB: Multiple responses allowed

Differences between high users and moderate/low users

One-quarter of respondents were classified as high users of CMs (n=151), 60% were considered moderate/low users (n=365) and around 15% of respondents were undefined and excluded from the following analyses.

Personal use of complementary medicines

High users were more likely to be female ($p < 0.01$) and younger (although not statistically significant $p = 0.03$). A greater proportion of high users of CMs reported they had started using CMs over five years ago (80% vs. 46%, $p < 0.0001$) (Table 21).

Table 21. Duration of using complementary medicines, by high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

When consumers started using complementary medicines	Low/moderate users % (n=365)	High users % (n=151)
Less than a year ago	15.9	2.7
1 to 2 years ago	18.6	6.6
3 to 5 years ago	18.9	9.3
Over 5 years ago	45.8	80.8
Don't know/refused	0.8	0.7

High users more frequently reported purchasing CMs from health food shops, natural health practitioners or directly from the supplier compared with low/moderate users (Table 22).

Table 22. Place where complementary medicines are purchased, by high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

Place of purchase	Low/moderate users % (n=365)	High users % (n=151)
Pharmacy	53.4	43.7
Supermarket	34.2	27.8
Health food shop	29.3	49.0**
Natural health practitioner/clinic	6.8	33.1**
Direct mail order/supplier/distributor	2.5	8.6*
Other	4.7	5.3
Don't know/refused	1.7	0.0

NB: Multiple responses allowed

Difference between high users and moderate/low users: * $p < 0.01$; ** $p < 0.001$

Respondents were asked two questions about using CMs with other medicines. High users were more often reported using prescription or over-the-counter medicines with CMs than low/moderate users (Table 23).

Table 23. Use of natural medicines with other medicines, by high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

Question	Type of respondent	Response		
		Yes %	No %	Don't know %
Have you ever used any natural medicines or health products along with any prescription medicines on the same day?	Low/moderate users (n=365)	44.7	53.4	1.9
	High users** (n=151)	62.9	35.1	2.0
Have you ever used any natural medicines or health products along with medicines purchased from the chemist or supermarket without a prescription, on the same day?	Low/moderate users (n=365)	49.9	47.7	2.5
	High users** (n=151)	63.6	33.1	3.3

NB: Difference between high users and moderate/low users: *p<0.01 ; **p<0.001

Discussing the use of complementary medicines with their GP

High CMs users more frequently reported that they mentioned or discussed their use of CMs with their doctor (66% vs. 48%, p<0.001) (Table 24). They also more often report being very confident talking to their doctor than low/moderate users (68% vs. 58%, NS) (Table 25).

Table 24. Discussing natural medicines and health products with GPs, by high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

Question	Type of respondent	Response	
		Yes %	No %
Have you ever mentioned or discussed your use of natural medicines and health products with your local doctor or GP?	Low/moderate users (n=365)	48.0	51.0
	High users** (n=151)	66.2	31.8

NB: Difference between high users and moderate/low users: **p<0.001

Table 25: Confidence talking to GP, of high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

Question	Type of respondent	Response		
		Very confident %	Somewhat confident %	Not confident %
How confident are you discussing natural medicines and health products with your local doctor or GP?	Low/moderate users (n=365)	58.4	27.7	9.9
	High users (n=151)	67.6	20.5	10.6

Attitudes to complementary medicines

High users reported the following advantages of CMs more often: better than taking drugs/fewer chemicals; being effective or helping; good for general health, wellbeing and preventative; not having many side effects; and being safe (Table 26). More high users reported expense as a disadvantage of CMs. Otherwise the high and low/moderate users reported similar disadvantages (Table 27).

Table 26. Advantages of using natural medicines and health products, high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

Advantages of CMs	Low/moderate users % (n=365)	High users % (n=151)
Natural	31.0	39.1
Better than taking drugs/fewer chemicals	26.8	38.4*
Effective/seem to work/helps	23.6	34.4*
General health and wellbeing	20.8	28.5
Not many side effects/gentle for the body	14.2	25.8*
An alternative to pharmaceuticals	12.9	15.2
Preventative health/holistic health	7.1	17.2**
Safe	5.5	15.2**
Boosts immune system/resistance	7.9	9.3
Cheaper	3.3	7.3
Can complement/supplement prescription medicines	4.1	4.0
None	2.7	2.0
Not addictive	1.4	4.6
Been around for years	1.9	2.6
Nutrient/diet supplementation	2.5	2.0
Other	2.5	5.3
Don't know/refused	7.7	1.3*

NB: Differences between high users and moderate/low users were significant: *p<0.01 ; **p<0.001

Table 27. Disadvantages of using natural medicines and health products, high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

Disadvantages of CMs	Low/moderate users % (n=365)	High users % (n=151)
None	31.8	24.5
Expensive	15.3	31.8**
Lack of research/not clinically tested/no warnings	12.3	9.3
Efficacy/ not sure it will work/less effective/placebo effect	10.1	10.6
Not enough information/don't know what you are getting	9.9	8.6
Take longer to work	6.6	7.9
Not prescribed properly by a practitioner	4.9	7.3
Problems mixing with other medicines	5.5	4.0
Side effects/allergies	3.6	1.3
Self medication issues e.g. dosage, overuse and adherence	2.2	4.6
Lack of availability	1.6	4.0
Ease of use: taste/smell	1.1	4.0
Other	2.5	9.3**
Don't know/refused	13.2	4.0*

NB: Difference between high users and moderate/low users: *p<0.01 ; **p<0.001

Perceptions of the safety of CMs

Compared with low/moderate CMs users, high CMs users were more likely to strongly agree or agree that CMs were 'safe to use in children' (57% vs. 38%, $p<0.001$) and that CMs are not as risky as prescription medicines (54% vs. 47%, $p<0.001$) (Table 28). Low/moderate and high users report similar rates of agreement about statements about CMs causing dangerous side effects and that the ingredients of CMs make them safe.

Table 28: Perception of safety, by high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

Statement	Type of Respondent	Response					
		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Don't know/refused
		%	%	%	%	%	%
It is safe to give natural medicines and health products to children	Low/moderate user (n=365)	5.2	32.3	20.8	28.5	7.7	5.5
	High user** (n=151)	13.9	43.1	21.9	11.9	6.6	2.6
Natural medicines and health products are not as risky as prescription medicines	Low/moderate user (n=365)	10.1	36.7	18.9	23.8	5.8	4.7
	High user** (n=151)	22.5	31.8	14.6	21.9	6.6	2.6
Natural medicines and health products can cause dangerous side effects	Low/moderate user (n=365)	6.3	35.1	15.1	33.2	7.1	3.3
	High user (n=151)	4.6	39.1	11.3	28.5	14.6	2.0
The ingredients in natural medicines and health products make them safe to use	Low/moderate user (n=365)	8.5	42.5	22.2	19.7	3.3	3.8
	High user (n=151)	10.6	47.0	22.5	17.2	1.3	1.3

NB: Difference between high users and moderate/low users: * $p<0.01$; ** $p<0.001$

Information seeking about complementary medicines

High users sought information about CMs more frequently with 75% reporting that they looked for information every few months or more frequently compared with 40% of low/moderate users ($p<0.001$) (Table 29).

Of the respondents who looked for information, a similar proportion of high and low/moderate users reported looking for the various types of information about CMs, with one exception – 23.5% of high users looked for information about dose compared with 12.5% of low/moderate users ($p=0.005$).

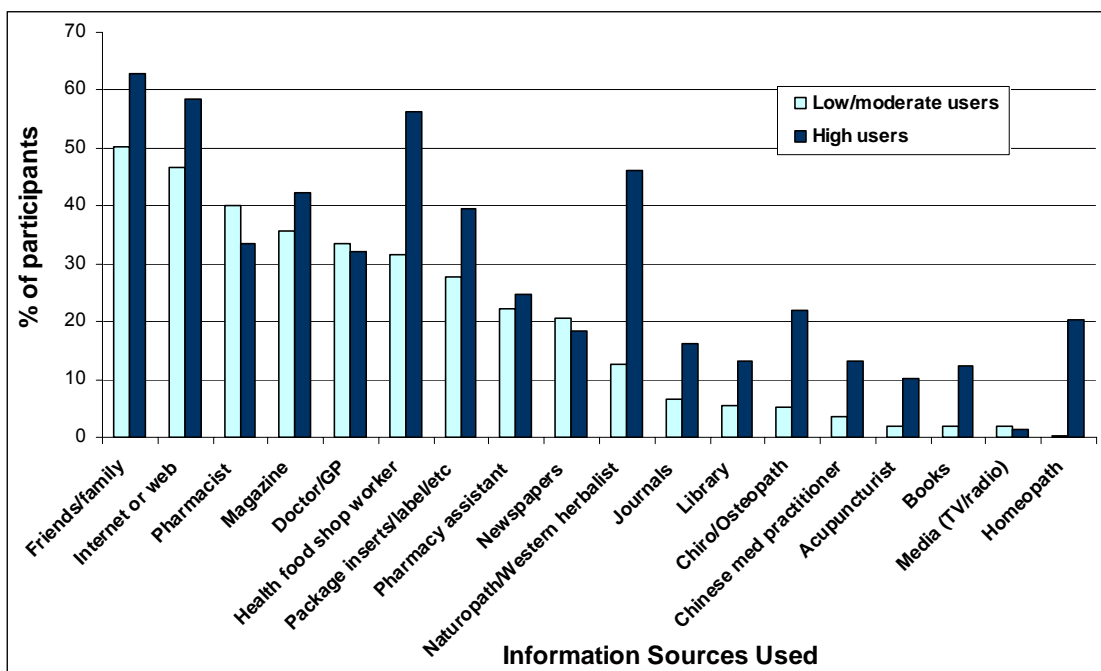
Table 29. How often information on complementary medicines was looked for, by high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

How often respondents have looked for information on complementary medicines in the last 12 months	Low/moderate users % (n=365)	High users % (n=151)
Every day	0.8	4.6
Several times a week	2.7	9.9
Several times a month	8.8	20.5
Every few months	27.7	40.4
Less often	30.4	15.2
Never	29.6	9.3
Don't know/refused	0.0	0.0

NB: Difference between high users and moderate/low users: $p < 0.001$

Compared with low/moderate users, a larger proportion of high users reported gaining CMs information from friends and family, the Internet, magazines, health food shop workers, package insert/labels, naturopaths, journals, library, chiropractors, acupuncturists, books and homoeopaths (Figure 5).

Figure 5. Complementary medicines information sources used in the last 12 months, high and low/moderate users, NPS Complementary Medicines Consumer Survey 2007



NB: Multiple responses allowed

Preferred sources of complementary medicines information

Low/moderate users most frequently reported doctors, pharmacists and the Internet as their preferred CMs information source. High users would prefer to get information from the Internet, naturopaths and other complementary therapists (Table 30).

The two groups differed in their preferences for CMs information sources. Low/moderate users more often suggested doctors (31% vs. 15%, $p<0.001$) and pharmacists (27% vs. 17%, $p=0.013$) while high users more often preferred naturopaths, books, and other traditional medicine practitioners (Table 30).

Table 30. Preferred sources of complementary medicines information, of high and low/moderate users, NPS Complementary Medicines Consumer Survey, 2007

Where users prefer to get their information	Low/moderate users % (n=365)	High users % (n=151)
Doctor	31.2	15.2**
Internet/website	24.1	27.8
Pharmacist	26.8	16.6
Health food shop worker	15.1	15.9
Naturopath	7.9	25.8**
Magazine articles	10.1	11.3
Family/friends	10.1	4.6
Book	5.2	13.9**
Pamphlet/package inserts /booklet	6.3	7.3
Pharmacy assistant	2.5	2.6
Television and radio programs	3.3	3.3
Other traditional medicine practitioner	1.4	7.9**
Traditional Chinese medicine practitioner/ Chinese herbalist	2.2	4.0
Newspaper	2.5	0.7
Chiropractor	1.1	2.6
Library/medical journal	1.6	1.3
Other	5.1	14.7**

NB: Multiple responses allowed

Difference between high users and moderate/low users: * $p<0.01$; ** $p<0.001$

Results: In-depth interviews with complementary medicines users

Interpreting the data presented in this section

When describing the results, two numbers are cited in brackets following each finding. These numbers refer to the number of participants who had one or more responses coded to that item theme (the first number) and the number of different ways participants reported the finding (the second number). For example, 'how CMs work (2, 4)' means that two participants mention that they wanted to know how CMs work and there were four different responses that were coded. These figures provide the reader with an understanding of how themes developed.

Participants

Twenty-four participants were interviewed; one interview was interrupted and was not completed but was included in the analysis; five interviews were later excluded from the analysis due to poor quality of the audio recordings.

Of the remaining sample of 19, six participants had used one or more CMs over the last 12 months ('low users'), six had used between two and four CMs over the same period ('medium users') and six had used five or more ('high users'). One participant was uncertain as to how many she had used, but would have been categorised as either a low or medium user (Table 31).

Of the 19 participants where data was available, six were male and 13 female. Seven participants lived in Sydney, nine in Melbourne and three in Launceston. Participants were evenly distributed by age, ranging from 24 to 80 years.

Of the six high users, four were currently seeing a complementary therapist and two had seen one in the past. Half of the medium users and low users had seen a complementary therapist in the past; the other half of both groups had never seen a complementary therapist.

The high level themes identified during the analysis were:

- Information needs.
- Information seeking strategies.
- Information sources.
- Safety and harmlessness.
- Purpose of CMs.
- Evidence of effectiveness.
- Enhancing the effectiveness of CMs: combinations.

Table 31. Characteristics of in-depth interview participants, NPS Complementary Medicines Consumer Survey, 2007

#	Age	Gender	CMs user category	Complementary therapist(s) used	Employment	State
1	41	Male	High	Naturopath	Employed	VIC
2	35	Female	High	Naturopath	Home duties	VIC
3	24	Female	High	In the past	Student	NSW
4	40	Female	High	In the past	Casual work/home duties	NSW
5	60	Female	High	Chiropractor	Retired	NSW
6	53	Female	High	Multiple	Employed	VIC
7	65	Female	Medium	None	Retired	VIC
8	56	Female	Medium	None	Employed	VIC
9	56	Male	Medium	None	Employed	VIC
10	64	Female	Medium	In the past	Retired	NSW
11	69	Female	Medium	In the past	Retired	NSW
12*	25	Female	Medium	In the past	Home duties	VIC
13	71	Female	Low-medium	In the past	Retired	TAS
14	69	Male	Low	TCM	Retired	VIC
15	38	Male	Low	None	Unemployed/looking for work	NSW
16	47	Male	Low	None	Employed	NSW
17	80	Female	Low	None	Retired	TAS
18	39	Male	Low	In the past	Employed	TAS
19	25	Female	Low	In the past	Employed	VIC

NB: * Interrupted interview

Information needs

The interview guide was designed to determine what the information needs of participants were at each point in the course of their use of a CM (see Appendix 2).

No information needs

Nine participants reported having no information needs regarding CMs^b. Of particular interest were the ways in which they described why they did not need information (9, 15). These included the trust in professional opinion:

No, to answer your question, no. Because it's prescribed by a qualified person, so I'm no expert on it. So I leave it in the hands of the expert. (69-yr-old, male, low user)

^b However, participants may have raised information needs in topical discussion, such as in the context of current CMs.

Really, it's a matter of the chemist has got the knowledge, I don't. Do what the person with the knowledge says. It's not a sheep station but you know, it if works that's good, if it doesn't work, I gotta do something else. But it's worthwhile giving it a try. (47-yr-old, male, low user)

For some, their responses appeared to relate to their trust in CMs in general (which is corroborated by intersectional findings):

I don't ever question what the quantity is or anything. (40-yr-old, female, high user)

One participant mentioned not requiring a sophisticated depth of information:

*I haven't had the need **to get right into it** and do searches on the computer. (39-yr-old, male, low user) (investigator emphasis)*

Information needs

Responses from those who had information needs about CMs related to both information content and information format.

Participants were directly asked 'What do you want to know about complementary medicines?' The findings for this theme were derived mainly from descriptive analyses, i.e. what participants said in response to the questioning by the interviewer. The interviews reiterated some of the types of information reported in the survey. These included: contra-indications and interactions (3, 4); side effects (1, 1); expense (1, 1); how to manage lethargy (1, 2); and education and information about CMs generally (2, 2).

The qualitative research also found additional types of information participants needed. These included: how CMs work (2, 3); ingredients or origins (2, 3); long-term impact (1, 1); and new research about getting the most benefit from CMs (1, 1).

Two participants were interested to know **how CMs worked**. This included how they might interact with other health-related factors to produce the desired outcomes:

So if there was that information like, you know eat broccoli and have this calcium, that will give you more concentration or help with your healing or whatever. (24-yr-old, female high user)

One respondent was interested to know what new research there was about the best dose of Vitamin C to use:

*I think I would want to know more detailed research that might suggest that ... you might be able to **absorb and use** 1000mg of vitamin C and ... that might be doing you more good. So by taking more it's something **that is better** than taking the minimum amount and the recommended daily intake. (41-yr-old, male, high user) (investigator emphasis)*

Information format

Information about preferred format of information was elicited through spontaneous responses from a small number of participants and in discussions of what they wanted to know about CMs.

One respondent noted wanting information in a paper form that she could find at a reliable source – in her case, the pharmacy – and take it home to be read at her leisure (1, 2). Three participants described needing more information on labels and the packaging of complementary products (3, 4).

Information seeking strategies

Participants were asked about how they find information about CMs in three ways: how they find out about CMs in general; how they had found information about the CMs they currently used, or had used in the past; and via a hypothetical question asking how they would seek information about the use of CMs for migraines.

The **involvement of other people** is critical in locating information about CMs. Participants most often approached other people (8, 15) when seeking information on CMs:

I always talk to people. Definitely talk to people. That would be something like finding out say from neighbours, friends, family. (56-yr-old, female, medium user)

How participants sought information from other people depended on the nature of the information they were seeking. Actively approaching other people (as the above example demonstrates) most often occurred when people had specific information needs.

Now that you ask me these questions, there was a bottle that I bought that made me feel depressed and I'm not a depressive person. And when I asked the chemist about it he said that particular brand had something in it – I can't think of the word at the moment, and it was like – almost like a sleeping pill. (69-yr-old, female, medium user)

So I actually asked a GP about these multivitamin tablets. (69-yr-old, male, low user)

When describing their past and current experiences of using CMs, participants most often reported learning about CMs through a **more 'passive' process**. 'Word of mouth' featured in a number of reports (8, 15), particularly in relation to recommendations of particular CMs:

Oh, just usually word of mouth. That [tea for general wellbeing] was one that was recommended to me from my boyfriend's mother who's very much into herbal teas. (24-yr-old, female, high user)

I just heard about it somewhere. (25-yr-old, female, medium user)

Participants who regularly consulted a naturopath were more active in seeking information and usually sought **advice from their naturopath** first. The presence of a naturopath appeared to largely 'cancel out' the need to consult other sources:

Interviewer: *Is there anywhere else other than the naturopath that you've sought advice or information on that area specifically?*

No. I've found her. She's my source. (35-yr-old, female, high user)

Some participants (4, 11) described seeking information from a variety of sources and in an almost step-wise progression that involved **seeking out several sources**:

*...you know like the reference found at the internet, **and then** you go to someone who knew something about eating, diet. (24-yr-old, female, high user) (investigator emphasis)*

....if there's something in the newspaper I'll have a squiz at it, and next time I see the naturopath I'll ask her about it. (35-yr-old, female, high user)

Information sources

Participants were asked directly where and/or from whom they had sought information about CMs and information was also elicited when discussing other aspects of CMs.

As with survey respondents, in-depth interview participants reported seeking information from friends and family, health food shop workers, pharmacists, GPs, the Internet, magazines, newspapers, books, packaging labels, TV and radio.

Additional information sources raised by participants in the qualitative component include: catalogues and other company produced information, company websites, formal study in related areas, letterbox drops, their own professional experience, and written information from health professionals (both conventional and complementary practitioners).

Consistent with findings throughout the in-depth interviews and the survey, '**other people**' were found to be a common source of information (8, 21). This included family, friends, pharmacists and GPs:

People tell me... (80-yr-old, female, low user)

All the grandmothers would tell you what to do. And we'd use them. (65-yr-old, female, medium user)

From a friend ... just at the club where I work. (47-yr-old, male, low user)

I think a lot of it is family knowledge, what she [mum] has learnt from her mother. (24-yr-old, female, high user)

I have a good friend who's a dietician and she talks me through a lot of the combinations of certain minerals and that sort of thing. (24-yr-old, female, high user)

Interviewer: *How do you decide who to talk to about various conditions?*

Word of mouth is a really big thing. (35-yr-old, female, high user)

Qualitative data illuminated the ways in which **print media** (magazines and newspapers) were sourced for information (10, 21). For the most part, this source of information provided general information that participants did not actively seek. While some made a point of reading regular alternative health supplements, they generally did not seek information from print media when looking for specific information on a complementary medicine that had current relevance to them.

When participants were asked a scenario question about what they would do to find information for migraines, the vast majority said they would go to the **Internet** first. Participants reported accessing Google, blogs, government sites and natural therapy association sites:

The first thing that I would do, I would go to the Internet and look for information. It's the biggest source of information. (24-yr-old, female, high user)

Packaging labels were another commonly mentioned source of information (7, 15):

...the dosage is on the packet and ... you don't really need to go and talk to someone if you have that. (24-yr-old, female, high user)

I have a look at the information on the packet, the fish oil I look for what sort of fish oil, whether its genetically modified, if its organic and all that sort of stuff. So I get as much information as I can from the packaging. (35-yr-old, female, high user)

Well I think, certainly if you self medicate you've got to be aware of reading the labels of products that you're consuming. (56-yr-old, male, medium user)

Assessing the reliability and credibility of website information

When participants stated that they used the Internet as a source of information on CMs, they were asked how they assessed the reliability and credibility of the information they find. While five participants gave 13 responses, no pattern was evident in how they assess the reliability of websites – although all five were able to give a ready answer. One theme, repetition of the information across different websites, was repeated by four respondents. Responses included:

- the provision of links to other, reliable sources such as journals, well-known organisations and a range of other professionals (24-yr-old, female, high user)
- a government website (56-yr-old, female, medium user; response to direct prompting)
- reputation of the organisation (25-yr-old, female, low user)
- the presentation of the website (41-yr-old, male, high user; 25-yr-old, female, low user)
- published research found through Google and a 'repetition' of information (41-yr-old, male, high user)
- detailed accounts on blogs and forums (41-yr-old, male, high user)
- having heard about the content of the website previously (25-yr-old, female, low user)
- repetition of information across sites: sites are reputable (40-yr-old, female, high user)
- Australian sites (40-yr-old, female, high user).

The perceived safety and harmlessness of complementary medicines

No respondent reported having concerns about the safety of CMs when directly questioned. Participants generally regarded CMs as being safe to use. When asked their reasons for believing CMs to be safe, many responses reflected a perception that there were few, if any, risks associated with dosage (7, 19). While there was some awareness of potential problems, participants generally considered overdoses to be impossible or rare.

When discussing dosage, potential problems raised related to the 'potency' of the medicine and official sanction. CMs are considered to be 'less potent' than conventional medicines (5, 6), particularly if taken in limited amounts:

Well I mean, well like anything else you have to be very careful but they're not as concentrated. They're on a, more a long-term basis and they're taken and natural medicines going to be six months before you really get any good result. (80-yr-old, female, low user)

...but otherwise you take just in moderation so they're okay. (35-yr-old, female, high user)

Some participants assumed that an official body of some kind would control or prevent the entry of CMs into the market if they were not safe (4, 4):

Well I think to myself if it wasn't safe they wouldn't be selling it you know. (64-yr-old, female, low user)

A number of participants mentioned the reputation (4, 8) and quality (5, 9) of a brand of CMs in response to questions concerning safety and harmlessness. During analysis,

responses concerning 'reputation' and 'quality' appeared to reflect similar underlying values. Intersectional analyses also showed these were linked to well-known brand names (7, 13) or being sold in a majority of stores:

I didn't go by price because I didn't get the lowest one. I think I just got the one that looked like a decent brand. (56-yr-old, female, medium user)

No I think I just bought Blackmores because they're a well known brand. (65-yr-old, female, medium user)

Probably what it was and I just thought it's a known brand, yeah it was the Myadec and they've got a good name. (56-yr-old, female, medium user)

Oh look, I think the fact that there's a majority of shops that sell it and have it on the shelves. So therefore, if it's on the shelf and it's a reputable brand, they wouldn't be allowed to sell it if there were side effects or people were having problems from it. (39-yr-old, male, low user)

Many participants expressed a number of **reasons why they felt that CMs were safe**.

One participant had experiences with CMs that served as a basis for her 'misconception' of the safety of CMs:

And it's quite difficult to overdose on things like iron^c and I know Vitamin C can give you a bit of an upset tummy because when I was six, I ate a cup full them. (38-yr-old, female, medium user)^d

When a health professional advises that a higher dose can be taken than the one recommended on the label, then this can imply that CMs are safe:

I don't think it's got here if you can have too much of it it says on this you can only have one a day but my doctor told me to have two. (56-yr-old, female, medium user)

Participants consider CMs to be 'natural' and thus safe:

Interviewer: ... *How do you think you'd know if you were taking too much?*

I don't know but I would think I would probably be alright because they're natural. (56-yr-old, as above)

Interviewer: ... *any concerns there about them interacting?*

Not really, I don't really think about it when they're natural things. (25-yr-old, female, low user)

Some participants who reported having had side effects from CMs were not as confident in these preparations. Three older female, medium users had all experienced side effects, including blurred vision and depressive symptoms. One reported discontinuing use on the advice of her GP. One male low user reported experiencing reflux with a particular brand of fish oil, but solved the problem by finding a brand that did not have this side effect. Another was aware of potential harmful interactions between CMs and conventional medicines, although most respondents who discussed combinations felt this was positive in that it enhanced their effectiveness (this is discussed later in this report).

^c Iron if taken in excess is toxic.

^d Interestingly, this participant reported that the cup of Vitamin C pills did, in fact, make her "really ill". It would appear that merely feeling ill is not a sign that the CM is unsafe.

One older, male, low user reported that if he was on any conventional medications, he would ask his doctor about taking CMs. No other participant spontaneously discussed using complementary and conventional medications simultaneously.

The reasons for using complementary medicines

Participants were not questioned about the purpose of CMs *per se*; this aspect of CMs emerged as an important area for investigation as the research progressed.

Some participants reported resorting to CMs when **conventional medicine had failed them** in some way (5, 7):

I think I might have had a few reactions to certain drugs so I tend to trust the natural things more. (56-yr-old, female, medium user)

When I had my accident the medical profession wrote me off and gave me a very depressing future. And I got seriously depressed about that because there was no hope. So I had to explore an alternative. I was so depressed I couldn't get out of bed... Luckily, I tried everything and found some things that helped. People had written me off. (41-yr-old, male, high user)

Other participants used CMs to **treat or manage a condition** and described numerous ways in which they did this (6, 16):

The reason why my husband went on to natural medicines is because he's an epileptic. (60-yr-old, female, high user)

I was lacking iron ... the doctor said to me, 'you don't eat red meat' so I was lacking in Vitamin B. (65-yr-old, female, medium user)

Some participants described CMs as providing a 'back-up' where their otherwise healthy lifestyles may be *temporarily* lacking:

You know that fact that if we have a meal with no nutrition in it, you know that you've had your multivitamin or had your B Complex for the day. (39-yr-old, male, low user)

Similarly, CMs could also **'make up for' their lifestyle practices** that may be *permanently* lacking in some way (4, 7):

Fish is a good brain food. So I take the oil, because I don't like fish. (69-yr-old, female, medium user)

But again reading it because Australians are very deficient in fish oil because we don't eat enough fish. So, and I think there's a strong recommendation in all this and articles I've read that people actually should be taking fish oil supplements. We don't eat enough fish. (56-yr-old, male, medium user)

Three participants discussed CMs as **supporting their overall, day-to-day functioning**. This was particularly the case for one participant who worked two jobs and had young children. He described a number of purposes in this respect, such as being able to get things done, supporting memory and working effectively (3, 8):

Functioning. Day-to-day chores (39-yr-old, male, low user)

Helps with getting by as well as working a normal job. (39-yr-old, male, low user)

Vitamins just get you through. (25-yr-old, female, medium user)

A similarly holistic perception of the purpose of CMs can be described as **general health and/or wellbeing**, including how they made participants 'feel' (4, 4):

You just feel clearer and energised. (41-yr-old, male, higher user)

One participant, a 56-yr-old, female, medium user, who worked with children, reported using CMs to prevent illness:

Well I don't know I'm just assuming it works I mean with my job ... I'm hoping it will keep the germs away you know with the kids sort of close to you, and for physical wellbeing but I haven't had a lot of time off work so it must be working.

Three participants described using CMs in particularly **busy or stressful times**, where they required peak performance from themselves (3, 7):

...there's been long days we stand on our feet... so we do get tired and we find that the vitamins help get you through. (39-yr-old, male, low user)

A number of participants described CMs as **supporting their already healthy lifestyles** (3, 4), effectively giving them an extra boost in terms of their health:

That means that these are things that you would take in addition to what you would normally be eating or what normally would be prescribed for you by a doctor. It would support your general health regime. (56-yr-old, male, medium user)

Evidence of effectiveness

Participants did not specifically report needing information on 'effectiveness'. When asked directly how they decide a CM works or when spontaneously describing it themselves, the only information source that figures is to 'talk to other people'.

Results for this section have been drawn from participants' open descriptions of the CMs they currently use and CMs they have used in the past. They spoke in depth about how they assessed and determined effectiveness; what constitutes evidence of effectiveness; and who is involved.

Assessing effectiveness

Participants often assessed the effectiveness of the CMs they took by their own experience. This most often involved a process of 'trial and error' (8, 10):

Some things you don't mind giving a go, \$15 or 20 bucks. Fish oil, well, OK I'll try that. (41-yr-old, male, high user)

... we both have the same problem so we both try it and see how it works. (69-yr-old, male, low user)

Some participants ceased taking CMs they had been taking for some time (4, 6):

Well, we have run out before and we haven't bought them and you sort of tend to feel that, you notice things more or less sort of seize them up. (39-yr-old, male, low user)

One participant, reported undertaking a personal 'systematic trial', which appeared to be a more considered and formalised approach to trial and error:

I think that you've got to, you've really got to conduct your own clinical trial. You've got to take them over a period of time and then you make an assessment over a period of one month, three months and even six months and beyond and see when you feel better. (56-yr-old, male, medium user)

Effectiveness: who is involved and how?

'Talking to people' was a common form of assessing effectiveness (11, 37), and was undertaken with a variety of people.

Informal networks figured strongly as a source of information, they also appeared prominently as a means for assessing the effectiveness of CMs (3, 11). However, health care professionals (both conventional and alternative) were also predominant in assessing effectiveness (8, 19):

Well for starters this was a qualified doctor and he's practicing in Chinese medicine – he had all the qualifications so I put my faith in them otherwise you would not use them. (69-yr-old, male, low user)

Well I ask whoever has recommended any product, and I ask the chemist and I don't buy any old thing. (80-yr-old, female, low user)

Through a good naturopath who will give you a good product, like the echinacea I don't just buy off the shelf. I get the practitioners echinacea in a bottle which they mix up themselves. (41-yr-old, male, high user)

What constitutes 'evidence'?

Participants primarily consider their own experience as evidence of the effectiveness of CMs. Evidence includes the absence of illness (1, 2), such as not getting a cold over winter; results of medical tests (2, 2), such as iron tests; and having had previous success with a CM (4, 5). Visible evidence (5, 7) was another source of evidence, which could mean a reduction in swelling, a family member telling them they were 'looking better', or having stronger nails. However, participants had many more ways to describe how they noticed an improvement in the way they *felt* (8, 27):

I think it did. Yeah. There were significant differences every day I woke up I was feeling better. (80-yr-old, female, low user)

It wasn't this swollen, it wasn't as red and it wasn't as sore. So for me that's successful. (69-yr-old, female, medium user)

I'll find that it might not take all the symptoms away but it will at least alleviate it and psychologically it helps as well. So it works on the sort of relaxing. (40-yr-old, female, high user)

One participant (24-yr-old, female, high user) also reported judging the effectiveness of a particular CM by its condition – its taste, 'freshness' or age – and also its origins (local or Australian products were considered more trustworthy).

A number of participants had faith in the long histories of use of particular CMs (4, 7):

I have a lot of belief in the old-fashioned use of medicines. (69-yr-old, male, low user)

We call them primitive people – but I don't think they are primitive at all and I think China too - don't forget China has had a history or culture that goes back further than our own culture so there must be some truth in some of these things.... would not have happened over night. (69-yr-old, male, low user)

And they've been doing that for hundreds of years so it can't be much wrong with it. (80-yr-old, female, low user)

And that was, we're talking, you know more than 35 years ago. So there was evidence then about the importance of certain vitamin supplements then. So, yeah, I'm sure that there must be a store of knowledge that those sorts of things do in fact work. (56-yr-old, male, medium user)

Two participants discussed media reports as being evidence of CMs effectiveness. One participant discussed hearing good reports on ginseng on talk-back radio, which positively influenced her decision to use the preparation. Another participant felt that stories in print about the effects of CMs needed to be supported by a research study:

Yeah, I'm always looking for some, there's got to be some credibility to what I'm reading. I'll be attracted to a headline in a magazine or in a newspaper and I'll read further and read with intent and purpose but unless there's something that sort of verifies the study then, you know, you're rather dismissive of it. (56-yr-old, male, medium user)

Another participant mentioned research as a source of evidence for effectiveness, albeit briefly:

And again it's a company self-promoting but they do have a lot of research to back up. (40-yr-old, female, high user)

Evidence of ineffectiveness

Results presented thus far could give the impression that participants had complete confidence in CMs. However, some participants expressed some reason to doubt CMs. Again, this was based on their personal experience. For these participants, a CM had resulted in no apparent improvement or change (4, 7), or the experience of a side effect (4, 8).

One respondent gave an interesting and clear reason as to why she sees a naturopath; for reasons very different to those for which she would need evidence of effectiveness:

Interviewer: *Is it a concern for you that this isn't evidence based?*

I get my comfort from the naturopath, and in some respects that's what I'm paying for. It would be nice to have it (the evidence). (40-yr-old, female, high user)

Enhancing the effectiveness of complementary medicines: combinations

Participants often talked about taking CMs 'in combination' with other CMs, with conventional medicines, with diet or lifestyle activities or taking CMs with multiple active ingredients. Higher order analyses showed that participants often gave these responses in answer to questions about quality or 'how they work'. Such combinations were nearly always viewed as being positive and believed to enhance the effectiveness of CMs.

Combinations of active ingredients, or taking different CMs together, were nearly always believed to add to the effectiveness and/or the 'potency' of a CM (5, 12):

I think it's one of those ones where you've got to have it in combination with something or I don't think it's been developed to its full potential yet. (24-yr-old, female, high user)

Apparently zinc works well with vitamin C. If you have the flu there is a synergistic effect there where you need the two, much better to get a combination sometimes. (41-yr-old, male, high user)

Yeah and that seemed to ... the combination of the echinacea and that was fantastic. ... I could feel a noticeable difference. (24-yr-old, female, high user)

However, some combination products were seen to be ineffective because of the low doses of some constituents:

Sometimes those multivitamins are just useless because they have the wrong combination of things. The iron count is so low that there's no point in taking them. (24-yr-old, female, high user)

One high CMs user mentioned that combinations of active ingredients may be most effective when tailored to the individual by a professional:

They can also tailor the product to you, whereas if you go to the shelf it's a bit more hit and miss. Whereas they can look at you a little bit more and make an assessment to what combination. (41-yr-old, male, high user)

A combination of CMs and lifestyle factors, particularly diet, was also a strategy that a number of participants believed enhanced CMs. This was also something that two participants wanted to know more about:

So if there was that information like, you know eat broccoli and have this calcium, that will give you more concentration or help with your healing or whatever. (24-yr-old, female, high user)

It seems to be working okay along with the other things that you use you know the physio and the orthotics. (56-yr-old, female, medium user)

Discussion

This study used a multi-method approach to understanding the use of CMs and the information needs and preferences of consumers who used CMs. Participants were randomly selected both to participate in the survey and also in the in-depth interviews, thus providing a snapshot of the use of CMs across the Australian adult population. This study differed from many previous CMs studies using open-ended interview methods, which have narrowly focused on consumers with serious illnesses, or samples of hospital inpatients or emergency department attendees.^{8,24-26}

Use of complementary medicines

International studies report that CMs users are more likely to be female, aged 25 to 44 years and have higher income and education levels.²⁷⁻²⁹ Although more females than males used CMs in our study, other socio-demographic characteristics appeared similar to Australian population, suggesting that CMs use is growing among a broader range of the population.

A significant proportion of consumers surveyed may be taking CMs inappropriately. Almost two-thirds of CMs users have used them with conventional medicines on the same day. Many appear to be unaware of the potential interactions that may occur. Some report being uncertain about why they are using them, say they use them for general health, to gain more energy or feel less fatigued or for uses that are not supported by evidence.

Consumers do not appear to adequately discuss the use of CMs with their doctor or pharmacist. Thus health professionals may be unaware of CMs use when recommending treatments that may interact with some CMs.

Attitudes to complementary medicines

Postmodern values are thought to play a significant role in the attraction of individuals to CMs and therapies.^{30,31} These values encompass a range of beliefs around the concepts of holism, 'natural', individual responsibility and consumerism.^{26,30-35} This research found similar beliefs and attitudes among the Australian participants.

The in-depth interviews demonstrated how this holistic view of health is intertwined with everyday practices and incidents. CMs were used in conjunction with, not in isolation from, other strategies for achieving and maintaining good health. Some participants described CMs as providing a 'back-up' where their otherwise healthy lifestyles may be temporarily lacking, while others discussed CMs as supporting their overall day-to-day functioning, particularly when life is pressured, such as working two jobs and raising young children.

Thirty percent of CMs users surveyed reported that one of the advantages of CMs is that they are 'natural' and another 30% reported they are 'better than taking drugs' or 'had fewer chemicals'. This perception was also found in the in-depth interviews, where the perception of CMs being 'natural' was equated with a perceived safety of CMs in overdose and lack of interactions with other medicines.

Consumerism may also play a role in the individual's choice to use CMs. The in-depth interviews found that the reputation and quality of particular brands were linked to participants' perceptions of the safety and harmlessness of CMs. The brands that participants felt were 'good' or 'reputable' were well-known, having large advertising budgets. This reputation appeared to influence the purchasing decision of many participants.

Perceptions of the safety of complementary medicines

As reflected by the different way CMs are regulated in Australia compared to conventional medicines, most CMs are safe to use in the recommended dose. However, CMs are medicines and consumers using some CMs may experience side effects and/or interactions with other medicines. Harm may also arise when people delay the use of effective conventional treatments for a serious medical condition, or have allergic reactions to CMs. CMs are low risk, not no risk.

Forty percent of Australian CMs users surveyed thought that CMs were tested independently by the government for safety or side effects. Some participants in the in-depth interviews assumed that an official body of some kind would control or prevent the entry of CMs into the market if they were not safe.

When asked what the disadvantages of CMs were, only 3% of CMs users reported side effects and 5% mentioned 'problems mixing with other medicines'. When directly asked about their perceptions of the safety of CMs, 40% to 50% of CMs users supported statements about the safety of CMs and 15% to 22% of users were uncertain about their safety. Of concern is that more than 40% of CMs users thought it was safe to give CMs to children. Although this may be true for most CMs marketed to children, it may not be true for other CMs or where higher doses than recommended are used. Participants in the in-depth interviews generally regarded CMs as being safe to use. CMs were not considered as 'potent' or strong as conventional medicines, particularly if taken in limited amounts.

These results are in keeping with previous research showing that many users have a limited knowledge of the risks of some CMs, including potential interactions with other medicines and do not consider that they may have adverse effects.^{3,36-38}

Perceptions about the effectiveness of complementary medicines

One in six CMs users believed that CMs were independently tested by the governments for effectiveness. Twenty-four percent of Australian CMs users reported that advantages of CMs included that they 'were effective', 'seemed to work' or 'were helpful'. High users of CMs more frequently report their effectiveness (34%) compared with low/moderate users (24%). When asked about the disadvantages of CMs in our survey, only 12% of CMs users reported 'lack of research', or 'not clinically tested' as problems; another 10% reported 'not sure it will work', 'less effective' or 'not enough information'. Australian and overseas research indicates that concerns around the effectiveness of CMs do not appear to correlate with dissatisfaction with or discontinuation of CMs use.^{25,26,39-41}

The in-depth interviews showed that 'talking to people' was the most common form of assessing the effectiveness of CMs, and was undertaken in a variety of ways. Participants said they also assessed the effectiveness of the CMs through their own experience. This could involve a process of 'trial and error'. This finding suggests that effectiveness is important to consumers but that many consumers conceptualise it differently to a clinical trial evidence for effectiveness.

Consumer Information seeking about complementary medicines

Passive vs. active information gathering

An important finding from the in-depth interviews was that much CMs information is not actively sought by consumers, but acquired without necessarily having specific information needs. How participants sought information from other people depended on the nature of the information they were seeking. Actively approaching other people most often occurred when people had specific information needs, particularly if they had experienced a negative outcome when using a CM.

However, when describing their previous experience of CMs and their current CMs use, participants most often reported learning about CMs through a more passive process. 'Word of mouth' featured in a number of reports, particularly in relation to recommendations of particular CMs. Much of the use of media sources reported by in-depth interview participants follows a similar pattern: reading of newspaper supplements and magazine articles and listening to radio segments are part of a regular pastime, rather than a direct way of obtaining answers to particular questions.

Those who currently had a regular naturopath were more active in seeking information, and sought advice from their naturopath first. Consumers who see a naturopath use them as their pre-eminent source of information. Additionally, some participants described seeking information from a variety of sources in an almost step-wise progression that involved seeking out several sources.

Type of complementary medicines information looked for

Of the survey respondents who looked for information, the most common things they wanted to find out were: benefits (56.4%), reason for use (41.1%), side effects or risks (24.2%), dose, e.g. how much or how often to take it (15.6%), and effects if taken with other medicines (11.5%). In-depth interview respondents also wanted to know about costs, how CMs work, ingredients or origins, and long-term impact and how to get the most benefit from CMs. US consumers reported similar types of information were important in making a decision to use herbal supplements: indications, side effects, content, dosage, interactions, and safety. However, consumers in the US mentioned clinical trials and effectiveness more frequently than consumers from Australia.⁴²

Sources of complementary medicines information used

Over 50% of respondents reported talking to family and friends (54.9%) or using the Internet to find information about CMs. Around one-third of respondents had talked with a health food shop worker, pharmacist, or doctor/general practitioner or read a magazine or package insert/label/pamphlets to find information about CMs.

Almost one third of CMs users also reported seeking information about CMs from a range of complementary therapists including: naturopaths/western herbalists; chiropractors/osteopaths; homeopaths; Chinese medicine practitioners; and acupuncturists. Although the information provided by these practitioners was highly regarded by CMs users, we know little about the CMs knowledge and information needs of these groups of practitioners.

Magazines were a common source of information, while TV and radio media were rarely mentioned (1.6%). In previous studies in Australia and overseas, the media was noted as the second, third or fourth most common source of information.^{25,42,44-48} Wilkinson et al reported newspapers (22%), television/radio (22%), and magazines (21%) were the types of media used in a survey of 300 consumers in rural New South Wales in 2000.⁴⁵

Most respondents who used an information source rated it as very or fairly useful. This included magazines, newspapers, and the Internet, suggesting that not all users may have the skills to discern or assess the quality of the information from such sources. The in-depth interviews identified that the print and radio media provided general information of interest that CMs users could draw upon as needed. For example, a favoured health-related radio segment or newspaper supplement on health and wellbeing may be accessed regularly.

The Internet as an information source for complementary medicines

Easton et al found only five studies about Internet use for CMs and reported only a small percentage of consumers were accessing CMs information from this source.⁴⁹ The NPS CMs survey revealed that more than 50% of CMs users who sought CMs information in the last 12 months have accessed the Internet for CMs information, and one-quarter of them have searched for this information several times a month or more often. Most sites reported as favourites for information on CMs were industry sponsored sites, raising concerns about the quality and independence of the information provided.

Preferred sources of complementary medicines information

Overall, CMs users most often reported doctors, the Internet and pharmacists as their *preferred* sources of information. Although almost 30% of CMs users used labels, package inserts and pamphlets for information about CMs in the last 12 months, only a very small proportion of survey respondents (7%) preferred these as a source of CMs information. Package labels were a common source of information for the in-depth interview participants. Many reported that they looked at the label to gain most of the information they needed.

Strengths and weaknesses of the study

This is the first Australian study to use a mixed method approach to assess the information needs and preferences of Australian consumers who use CMs. This approach allowed for a large random sample of CMs users across Australia to be contacted and surveyed and the collection of more detailed information from a randomly selected sub-sample of those with varying levels of CMs use.

Information could then be triangulated to give a richer understanding of how a range of CMs users seek or gain information and how they make decisions about the use of CMs.

As with all telephone surveys, some people cannot be contacted or may be unwilling or unable to participate, and may differ in CMs use from those included in the survey. This may be due to not having a landline telephone, language difficulties, being very ill, being institutionalised or not being interested in the survey topic or in participating in surveys generally. When the socio-demographic characteristics of the survey participants were compared with the Australian population, they were very similar except for language spoken at home and gender. This may be explained in part by the survey only being conducted in English, and women being more likely than men to participate in surveys generally.

Another limitation of the study is that it focussed on CMs users and did not canvas the attitudes, information needs of those who do not use CMs. This is an important area for further research.

Conclusions

This report shows that those who use CMs think differently about CMs compared to conventional medicines, particularly prescription medicines. Many consumers saw their CMs use as 'natural' and part of a holistic view of health. CMs were often used in conjunction with other strategies for achieving and maintaining good health and supporting the performance of everyday tasks.

The research reveals that many users associated 'natural' with CMs being harmless and unlikely to cause any adverse effects. However, although most CMs have few risks, some consumers may experience the potential harms of some CMs including allergic reactions, side effects and possible interactions with conventional medicines.

CMs users apply both passive and active means to seek information about CMs. CMs information is often communicated passively through informal conversations with family, friends and acquaintances and print media. They also reported actively seeking CMs information from a variety of sources including family and friends, the Internet, health food shop workers, pharmacists, magazines, doctors/general practitioners, package inserts/labels/pamphlets and a variety of complementary therapists.

Respondents reported that the CMs information resources they used were fairly useful or very useful. This included magazines, newspapers, and the Internet where the quality of the content and independence of the information may vary substantially. Users appeared to often accept information from these sources and then evaluate the effects of the CM through trial and error. In most cases this may be appropriate, but it may not necessarily mean that CMs are being used in the most safe and effective manner.

Strategies to improve decisions by consumers about CMs should focus on enhancing CMs information resources preferred by consumers including doctors, the Internet and pharmacists. The information available must be able to meet consumers' needs and provide independent, balanced and high quality information in an easily accessible format. Strategies are also needed to improve consumer skills in assessing the risks and benefits of using CMs.

Further research is needed to better understand how the use of CMs intersect with the use of conventional medicines and how to ensure that consumers balance the risks and benefits of both. It will also be important to further investigate how to best present relevant, independent and balanced CMs information to consumers and identify the skills they need to support their decisions about the use of CMs. Another significant area for further research is to gain an understanding of the knowledge and information needs of health care workers who provide information to consumers about CMs to ensure that consistent and accurate information is available to support the quality use of complementary medicines.

Acronyms and abbreviations

CMIRG	Complementary Medicines Implementation Reference Group
CM(s)	Complementary medicine(s)
CP	Community pharmacist
DOHA	Department of Health and Ageing
GP	General practitioner
NPS	National Prescribing Service
NS	Not statistically significant
QUM	Quality use of medicines
TAIS	Therapeutic Advice and Information Service
TCM	Traditional Chinese Medicine Practitioner
TGA	Therapeutic Goods Administration

Appendix 1: Survey questionnaire

Use of complementary medicines

The first questions are about your use of natural medicines and health products.

1. In the last 12 months, which of these natural medicines and natural health products have you used? Have you used: (READ OPTIONS 1–12) (MULTIPLE RESPONSE)

1. Vitamins – prescribed by a doctor
2. Vitamins – not prescribed by a doctor
3. Mineral supplements – prescribed by a doctor (Prompt if necessary: Examples may include iron, calcium)
4. Mineral supplements – not prescribed by a doctor (Prompt if necessary: Examples may include iron, calcium, zinc, selenium)
5. Chinese traditional medicines (e.g. Chinese herbs)
6. Indigenous or other traditional medicines (e.g. Ayurvedic medicine)
7. Other herbal medicines often called western herbal medicines (Prompt if necessary: Examples may include echinacea, evening primrose oil, bark flowers)
8. Homeopathic medicines
9. Soy-based medicines (Prompt if necessary: Soy tablets or liquid medicine only NOT soy milk or soy food products)
10. Herbal teas (Prompt if necessary: Peppermint, Valerian)
11. Aromatherapy oils for medicinal purposes (Prompt if necessary: Oils applied to skin for healing)
12. Other natural medicines from fish or animals (Prompt if necessary: Examples may include: fish oil, glucosamine)
13. Any other natural medicines (Please specify)
14. None (DO NOT READ)

15. Don't know (DO NOT READ)

16. Refused (DO NOT READ)

If Q1 = 14–16 OR Q1 = 10 only → Thank you for your time

2. Which of the following natural therapists have you visited in the last 12 months? (READ OPTIONS) (MULTIPLE RESPONSE)

1. Naturopath/ western herbalist
2. Aromatherapist
3. Homeopath
4. Acupuncturist
5. Iridologist
6. Osteopath
7. Chiropractor
8. Reflexologist
9. Traditional Chinese medicine practitioner / Chinese herbalist
10. Other traditional medicine practitioner
11. Other natural therapist (Please specify)
12. None (DO NOT READ)
13. Don't know (DO NOT READ)
14. Refused (DO NOT READ)

3. Have you taken any of the following natural medicines and health products in the last 12 months? (READ OPTIONS) (MULTIPLE RESPONSE)

1. Black cohosh
2. Echinacea (ECK-in-AY-shuh)
3. Fish oil
4. Gingko biloba
5. Glucosamine
6. Ginseng
7. St John's wort
8. Valerian
9. Vitamin A
10. Vitamin E taken orally
11. Vitamin B
12. Zinc
13. Natural weight loss products
14. Coenzyme Q10
15. Chinese herbal medicines (automatic fill if Q1=5)
16. Homeopathic medicine (automatic fill if Q1=8)
17. Other western herbal medicines (automatic fill if Q1=7)
18. Don't know (DO NOT READ)
19. Refused (DO NOT READ)
20. None of these → Q6 (DO NOT READ)

4. For what reasons did you use [NAME OF MEDICINE IN Q3] in the last 12 months? (DO NOT READ OPTIONS) (MULTIPLE RESPONSE) (Repeated for each medicine selected in Q3)

1. General health, e.g. stay healthy
2. Preventive health, e.g. prevent a cold
3. Blood thinning or heart circulation
4. Blood pressure
5. Cholesterol
6. Bladder or kidneys
7. Muscles or joints or knee pains
8. Lungs/respiratory/ chest or sinuses / colds or flu
9. Immune system
10. Stomach and bowels
11. Prostate

12. Menopause/ pre-menstrual syndrome (PMS)
13. Sleeping/insomnia
14. Memory/dementia
15. Depression/anxiety
16. Skin condition
17. Other reasons (please specify)

-
18. Don't know (DO NOT READ)
 19. Refused (DO NOT READ)

5. a. Do you use [NAME OF MEDICINE IN Q3 1–14] ...(READ OPTIONS) (SINGLE RESPONSE) (Repeated for each medicine selected in Q3)

1. All of the time
2. Most of the time
3. Sometimes for specific symptoms or conditions
4. Occasionally
5. Don't know (DO NOT READ)
6. Refused (DO NOT READ)

5. b. In the last 12 months, how many different [NAME OF MEDICINE IN Q3 15–17] have you used? (DO NOT READ OPTIONS)

1. 1–2
2. 3–5
3. more than 5
4. Don't know
5. Refused (DO NOT READ)

5. c. Thinking about [NAME OF MEDICINE IN Q3 15–17], do you use any of your [NAME OF MEDICINE IN Q3 15–17], ...(READ OPTIONS) (MULTIPLE RESPONSE) (Repeated for each medicine selected in Q3 15–17)

1. All of the time
2. Most of the time
3. Sometimes for specific symptoms or conditions
4. Occasionally
5. Don't know (DO NOT READ)
6. Refused (DO NOT READ)

6. **Where do you purchase your natural medicines and health products? (DO NOT READ OPTIONS) (MULTIPLE RESPONSE) Prompt: Anywhere else?**

1. Supermarket
2. Pharmacy
3. Health food shop
4. Internet
5. Natural health practitioner
6. Other (Please specify)

7. Don't know (DO NOT READ)
8. Refused (DO NOT READ)

7. **When did you start using natural medicines and health products? (READ OPTIONS) (SINGLE RESPONSE)**

1. Less than a year ago
2. 1 to 2 years ago
3. 3 to 5 years ago
4. Over 5 years ago
5. Don't know (DO NOT READ)
6. Refused (DO NOT READ)

8. **Have you ever used any natural medicines or health products along with any prescription medicines on the same day? (SINGLE RESPONSE)**

(Prompt if necessary: a prescription medicine is that prescribed by a GP or doctor) (IF RESPONDENT CONCERNED OR WANTS FURTHER INFORMATION: Please contact your GP or Medicines Line on 1300 888 763 for further information)

1. Yes
2. No
3. Don't know (DO NOT READ)
4. Refused (DO NOT READ)

9. **Have you ever used any natural medicines or health products along with medicines purchased from the chemist or supermarket without a prescription, on the same day? (SINGLE RESPONSE)**

(Prompt if necessary: examples are paracetamol, aspirin) (IF RESPONDENT CONCERNED OR WANTS FURTHER INFORMATION: Please contact your GP or Medicines Line on 1300 888 763 for further information)

1. Yes
2. No
3. Don't know (DO NOT READ)
4. Refused (DO NOT READ)

Attitudes to natural medicines and health products

The next questions are about your attitudes to natural medicines and health products in general.

10. **Have you ever mentioned or discussed your use of natural medicines and health products with your local doctor or GP? (SINGLE RESPONSE)**

1. Yes
2. No
3. Don't know/don't have a GP →Q12 (DO NOT READ)
4. Refused (DO NOT READ)

11. **How confident are you discussing natural medicines and health products with your local doctor or GP? Are you: (READ OPTIONS) (SINGLE RESPONSE)**

1. Very confident
2. Somewhat confident
3. Not confident
4. Don't know (DO NOT READ)
5. Refused (DO NOT READ)

12. What do you think are the main advantages of using natural medicines and health products? (DO NOT READ OUT) (MULTIPLE RESPONSE) PROMPT: Any Others?

1. Natural
2. Not many side effects
3. Safe
4. Better than taking drugs / fewer chemicals
5. Effective/ seem to work
6. Not addictive
7. Been around for years
8. Cheaper
9. An alternative to pharmaceuticals
10. Boosts immune system/resistance
11. Can complement/supplement prescription medication
12. Other (Please specify)
13. None (DO NOT READ)
14. Don't know (DO NOT READ)
15. Refused (DO NOT READ)

13. What do you think are the main disadvantages of using natural medicines and health products? (DO NOT READ OUT) (MULTIPLE RESPONSE) PROMPT: Any Others?

1. Expensive
2. Take longer to work
3. Lack of research / not clinically tested / no warnings
4. Not sure it will work
5. Not enough information / don't know what you are getting
6. Taste/smell
7. Problems mixing with prescribed medicines
8. Not prescribed/recommended by doctors
9. Other (Please specify)
10. None (DO NOT READ)
11. Don't know (DO NOT READ)
12. Refused (DO NOT READ)

To what extent do you agree or disagree with the following statements on natural medicines and health products? Please say if you strongly disagree, disagree, neither agree or disagree, agree or strongly agree with the statement.

14. It is safe to give natural medicines and health products to children. (SINGLE RESPONSE)

1. Strongly disagree
2. Disagree
3. Neither agree or disagree
4. Agree
5. Strongly agree
6. Don't know (DO NOT READ)
7. Refused (DO NOT READ)

15. I only use natural medicines and health products as a last resort. (SINGLE RESPONSE)

1. Strongly disagree
2. Disagree
3. Neither agree or disagree
4. Agree
5. Strongly agree
6. Don't know (DO NOT READ)
7. Refused (DO NOT READ)

16. Natural medicines and health products are not as risky as prescription medicines. Do you: (READ OPTIONS)

1. Strongly disagree
2. Disagree
3. Neither agree or disagree
4. Agree
5. Strongly agree
6. Don't know (DO NOT READ)
7. Refused (DO NOT READ)

17. Natural medicines and health products can cause dangerous side effects. (SINGLE RESPONSE)

1. Strongly disagree
2. Disagree
3. Neither agree or disagree
4. Agree
5. Strongly agree
6. Don't know (DO NOT READ)
7. Refused (DO NOT READ)

18. The ingredients in natural medicines and health products make them safe to use. (SINGLE RESPONSE)

1. Strongly disagree
2. Disagree
3. Neither agree or disagree
4. Agree
5. Strongly agree
6. Don't know (DO NOT READ)
7. Refused (DO NOT READ)

Information needs and seeking

The next questions are about your information seeking on natural medicines and health products.

19. In the last 12 months, how often have you looked for information on natural medicines and health products? (READ OPTIONS) (SINGLE RESPONSE)

1. Every day
2. Several times a week
3. Several times a month
4. Every few months
5. Less often
6. Never →Q28
7. Don't know (DO NOT READ) →Q28
8. Refused (DO NOT READ) →Q28

20. What information did you want to find out? (DO NOT READ LIST) (MULTIPLE RESPONSE) (PROMPT: Any Others?)

1. Side effects or risks
2. Dose – i.e. how or how often to take it

3. Indication for use – i.e. what it is used for
4. Benefits
5. Effects if taken with other medicines
6. Use in children
7. Use in pregnancy
8. Cost
9. Where to buy it
10. Other (Please specify)

21. In the last 12 months, have you asked any of the following people for information about natural medicines and health products? (READ OPTIONS) (MULTIPLE RESPONSE)

1. Friends/family
2. Doctor
3. Pharmacist
4. Pharmacy assistant
5. Health food shop worker
6. Naturopath/ western herbalist
7. Traditional Chinese medicine practitioner /herbalist
8. Homeopath
9. Chiropractor
10. Acupuncturist
11. Others (specify)

-
12. None of these (DO NOT READ) →Q23
 13. Don't know (DO NOT READ) →Q23
 14. Refused (DO NOT READ) →Q23

22. How useful was the information you received from (PERSON IN Q21)? By useful, we mean the person provided the information you needed. (Repeat for each person in Q21). Was it: (READ OPTIONS) (SINGLE RESPONSE)

1. Very useful
2. Fairly useful
3. Somewhat useful
4. Not so useful
5. Not useful at all
6. Don't know (DO NOT READ)
7. Refused (DO NOT READ)

23. In the last 12 months, where else have you looked for information about natural medicines and health products? (READ OPTIONS) (MULTIPLE RESPONSE)

1. Internet or web
2. Library
3. Magazine
4. Newspapers
5. Journals
6. Package insert /leaflets
7. Any others? (Please specify)
8. None of these (DO NOT READ)
→Q28
9. Don't know (DO NOT READ)
→Q28
- 10.10. Refused (DO NOT READ)
→Q28

24. Thinking of (INFORMATION SOURCE IN Q23), how useful was this source for information on natural medicines and health products? By useful, we mean the source offered the information you needed. (Repeat for each information source in Q23). Was it: (READ OPTIONS) (SINGLE RESPONSE)

1. Very useful
2. Fairly useful
3. Somewhat useful
4. Not so useful
5. Not useful at all
6. Don't know (DO NOT READ)
7. Refused (DO NOT READ)

25. (ASK IF 'YES' TO 23.1) In the last 12 months, how often did you use the Internet for advice or information about natural medicines or health products? (READ OPTIONS) (SINGLE RESPONSE)

1. Every day
2. Several times a week
3. Several times a month
4. Every few months
5. Less often
6. Never
7. Don't know (DO NOT READ)
8. Refused (DO NOT READ)

26. (ASK IF 'YES' TO 23.1) When you look for natural medicines and health product information on the Internet, is there a particular website you go to, or do you browse different sites? (MULTIPLE RESPONSE)

1. One favourite site – [ASK- Can you give me the name of the site – record]
2. Site (please specify)
3. Visit different sites
4. Don't know (DO NOT READ)
5. Refused (DO NOT READ)

27. How much of the information you find on the Internet about natural medicines and health products do you think you can trust? (READ OPTIONS) (SINGLE RESPONSE)

1. All
2. Most
3. About half
4. Some
5. None at all
6. Don't know (DO NOT READ)
7. Refused (DO NOT READ)

28. Where would you prefer to get information on natural medicines and health products? (DO NOT READ OUT) (MULTIPLE RESPONSE) PROMPT: Any Others?

1. Book
2. Pamphlet/ package inserts
3. Magazine articles
4. Internet/website
5. Telephone hot line
6. Television and radio programs
7. Friends/family
8. Doctor
9. Pharmacist
10. Pharmacy assistant
11. Health food shop worker
12. Acupuncturist
13. Traditional Chinese medicine practitioner / Chinese herbalist
14. Other traditional medicine practitioner

15. Naturopath
16. Western herbalist
17. Chiropractor
18. Osteopath
19. Other (please specify)
20. Do NOT want to get information (DO NOT READ)
21. Don't know (DO NOT READ)
22. Refused (DO NOT READ)

29. Do you think that natural medicines and health products are independently tested by a government agency such as the Therapeutic Goods Administration before being sold? (SINGLE RESPONSE)

1. Yes
2. No →Q31
3. Don't know (DO NOT READ)
→Q31
4. Refused (DO NOT READ) →Q31

30. What do you think they are tested for? (DO NOT READ OUT) (MULTIPLE RESPONSE) PROMPT: Any Others?

1. Quality
2. Safety, side effects
3. Effectiveness/efficacy/effect
4. Strength
5. That they do what they claim to do
6. Other (Please specify)
7. Don't know (DO NOT READ)
8. Refused (DO NOT READ)

Personal information

The last questions are about yourself and your general health to get a good cross-section of people in the survey.

31. A question about your health in general. Would you say your health is: (READ OPTIONS) (SINGLE RESPONSE)

1. Excellent
2. Very good
3. Good
4. Fair
5. Poor
6. Don't know (DO NOT READ)
7. Refused (DO NOT READ)

Now, a few questions about yourself.

32. Are you male or female? (ONLY ASK IF UNSURE) (SINGLE RESPONSE)

1. Male
2. Female
3. Don't know (DO NOT READ)
4. Refused (DO NOT READ)

33. Which of the following age groups do you fall into? (READ OPTIONS 1-7) (SINGLE RESPONSE)

1. 18–24 years
2. 25–34 years
3. 35–44 years
4. 45–54 years
5. 55–64 years
6. 65–74 years
7. 75 years and older
8. Don't know (DO NOT READ)
9. Refused (DO NOT READ)

34. What is the highest educational qualification you have completed? (DO NOT READ) (SINGLE RESPONSE)

1. University, College of Advanced Education, or some other tertiary institute degree or higher
2. TAFE certificate or diploma
3. Completed School Certificate – Intermediate – year 10 – 4th Form
4. Completed Higher School Certificate – Leaving – Year 12 – 6th Form
5. Completed Years 7–9
6. Completed primary school
7. Other (Please specify)
8. Don't know (DO NOT READ)
9. Refused (DO NOT READ)

35. In the last week, which of the following best describes your employment status? (READ OPTIONS) (SINGLE RESPONSE)

1. Worked for payment or profit
2. Worked for payment or profit, but absent on paid leave, holidays, on strike, stood down
3. Unpaid work in a family business
4. Other unpaid work
5. Did not have a job
6. Retired
7. Received Government pension or benefit
8. Don't know (DO NOT READ)
9. Refused (DO NOT READ)

36. In which country were you born?

1. Australia
2. Other country (Please specify)
3. Don't know (DO NOT READ)
4. Refused (DO NOT READ)

37. What language do you usually speak at home?

1. English
2. Other (Please specify)
3. Don't know (DO NOT READ)
4. Refused (DO NOT READ)

38. May I check your postcode?

1. (please specify)
2. Don't know (DO NOT READ)
3. Refused (DO NOT READ)

Thank you for completing this survey which is part of a wider study on the use of complementary medicines. The study is carried out by the National Prescribing Service (NPS) in Sydney, which is an independent, non-profit organisation funded by the Australian Government Department of Health and Ageing that aims to give people information and skills on how to use medicines for better health outcomes. A brief summary of the results will be available on the NPS website www.nps.org.au/research at a later date.

Recruitment script for in-depth interview if criteria met

Again, my name is _____ from [market research company] . Please be assured that your answers are used only for statistical purposes and cannot be identified back to you. If you have any queries about this interview, please call us on freecall [phone number].

NPS are seeking to further interview a number of complementary medicine users. The interviews will be taped, take up to one hour, and take place at a time and location that suits you. Interview participants receive a \$50 retail voucher for use at Coles or Myer outlets. The interview will ask further about your information needs around complementary medicine, are strictly confidential and only heard by the NPS researchers. Not everyone that provides their contact details will be interviewed, we just need your consent to be contacted.

Are you willing to participate in this next interview study:

1. Yes – May I have your first name and a contact phone number or email address.
2. No

Name: _____

Contact number/email: _____

More information on this study can be obtained from the NPS researchers, [name] and [name], 9.00am – 5.00pm AEST weekdays on [phone number].

Appendix 2: Complementary medicines user in-depth interview guide

Part A

Introduction

I'm interested in general health issues and your use of medications in general. By medications I mean those prescribed by a doctor and those that you buy over the counter such as Panadol and aspirin. There are no right or wrong answers.

General health and medications use

Firstly, can you tell me about any health conditions you have had in the last 12 months, and any medications you are using for that condition. Explore:

- When you are ill, how do you choose which medicine to use?
- When was the last time you used a doctor or other health professional? How did you decide to choose that person? What is good about them? What is not good?
- Do you always follow the advice of this health professional?
- What do you do for your general health and wellbeing? Do you exercise, drink, smoke etc? Explore.
- Please tell me a bit about your family's history of health care, what remedies your parents used, their use of health services and so on.

Use of natural medicine practitioners

[Additional questions if appropriate:]

Now, thinking about the use of natural therapists and medicines:

1. Have you ever been to a natural medicine practitioner such as a naturopath, chiropractor, herbalist, acupuncturist and so on? Explore.
2. How do you assess that they are good at their job?
3. How did it feel in comparison to a doctor or regular health professional?
4. Did you discuss your use of medications with the natural health practitioner?
5. When I say complementary medicine, what comes to mind?
6. Are natural medicines medicines? How are they different and the same?

Scenario question

If you wanted to know about how to treat a migraine, what are the steps you would take to find that information out?

Part B

Introduction

I'm interested in how people that use CMs products find information about these products, what they want to know, find out and understand about CMs. To start with, could you look at this card [LIST OF CMs] and tell me which of these you have used in the *last 12 months*.

SHOW LIST – CMs OF INTEREST

Decisions around first use

[FOR EACH CM]

Thinking back over the time since you first used [name CM], could you describe the situation that led you to use that product [RECORD IN TIME LINE CHART]

CM						
Event / situation						
Year						

INTERVIEWER TO CHOOSE TWO CMs FOR FURTHER DISCUSSION

FOR EACH OF THE TWO CMs CHOSEN:- LAST TWO CMs USED IN LAST 12 MONTHS

I am going to ask you about your use of the last two CMs used in the last 12 months.

Think back to the situation/s [i.e. this could be an illness condition, a preventative health strategy etc] that caused you to use these CMs.

Complementary medicines

1. To start with, tell me about what led to the initial use of this CM (SELECT LAST USE). Was the product for a medical condition, general health and wellbeing or both? What was the situation that led to the use of the product?
2. How long have you used this CM? Why did you start using it? Who put you on to it?
3. When you first started using it, what did you want to know, find out or understand about the medicine?
4. What led you to have this question? Did you find that out? How?
5. How did you seek information to answer the question? Who or what did you talk to?
6. How did you decide the CM would work? How did you know?
7. Have you taken it at the same time as another medication? Explore.
8. [IF NOT MENTIONED] You haven't talked about side effects of the CM. To what extent was that an issue? What is your experience of side effects? Just think of some of the people you mentioned as information sources [MENTION THEM].
9. Do you think of this CM as safe? What do you mean by safe or not safe? What makes it safe or not safe?
10. Do you prefer a particular brand? On the last occasion you used it, how do you decide which brand to choose?

Condition

Thinking of the condition / health issue for which you used that CM:

- 1 a. Think about each of these steps, what happened, the people involved, and focus especially on what you needed to know, find out or understand about the situation and/or the CM.

[TAKE EACH INDIVIDUAL STEP *[REPEAT #2 FOR EACH STEP ON THE TIMELINE]*]
- 2 a. [EACH STEP] At this point when [repeat the timeline step] did you have any questions or things you needed to know, find out or understand? What were these? Any others? Any confusions? [record questions].

b. [ANCHOR] At this time, did you come to any conclusions, have any ideas, arrive at understandings? What were these? How did these arise? [explore in detail the information seeking process].

c. [THEN GO BACK TO EACH STEP] *[repeat for each question]*
- 3 At this point in the situation, you had certain questions or information needs. We will talk now about the two [FLEXIBLE] most important of these questions, one by one. It doesn't matter if the question (i.e. information need) was met or not. For each question:
 - a. What led you to have this question?
 - b. Did you get an answer to this question? Did you find out what you wanted to know? How did you try to get the answer?
 - c. Why did you choose this way to get an answer to the question? How do you prefer your information?
 - d. How did you feel about it?
 - e. [IF YES] Did the answer help, or hinder you? How hard or easy was it to get an answer?
 - f. [IF NO] Was there something that blocked you in getting an answer to the question? In an ideal world, how would you have been helped to answer the question?
- 4 Information sources: Let's explore more some of the information sources you have talked about. You said you used [source] to help answer your question or concern around condition. Why did you use that source? How did you assess the information? Did you seek it, or did the information come to you? Did you act on that information? How? How did you know it was credible? Has a GP or pharmacist ever recommended a CM to you? Please tell me about it, what happened and so on.
 - a. (IF INTERNET IS AN INFORMATION SOURCE)

You said you would use / have used the Internet as an information source on CM. Can you name an Internet site that you have used for CMs information?

Why did you use that site?

How did you know you can trust that site?

How did you assess the information on that site?
 - b. Scenario question e.g. if you wanted to know about the CMs to take to treat headaches, what are the steps you would take to find that information?

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