Real Voices, New Insights

Eureka Moments for Fertility in Asia

FERRING
PHARMACEUTICALS

Real Voices, New Insights

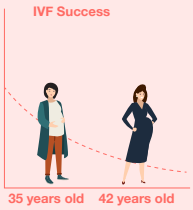
The report integrate findings from the "EUREKA" multi-country survey across 7 countries in Asia involving over 1,465 respondents who are considering, receiving or have completed fertility treatments. Supported by publications and experts' opinion, these insights can guide couples, the public and governments to better understand the infertility journey to help more achieve their family building dreams.

EUREKA SURVEY

Total	208	205	217	203	221	201	210
Patients	104	101	117	101	116	101	104
Partners	104	104	100	102	105	100	106

1

Time is of essence. Age and duration of infertility impact treatment success.



2

Seek help early.

WHO^ defines infertility as the failure to achieve a pregnancy after ≥12 months of regular unprotected sexual intercourse. However, survey respondents in Asia wait much longer before seeking medical treatment. In India, Japan, Korea and Singapore, as high as 1 in 3 chose a passive "wait and see" approach despite their diagnosis.

On average, respondents in Asia took:

6.8 years total in their fertility journey

3.6 years were spent trying to conceive naturally

1.8 years to start treatment after diagnosis

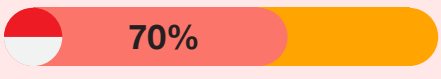
1.4 years after starting treatment to achieve successful conception

3

Over 40% of respondents delayed treatment during COVID-19. Digital initiatives accelerated significantly in this period - **telemedicine, remote monitoring and other digital innovations** will have a lasting impact into the future.

More than **70%**

of respondents have low-moderate knowledge of infertility and conception.



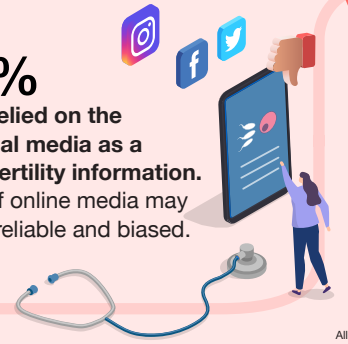
Indonesia

Japan, Korea, Singapore, Vietnam

Self-reported awareness of infertility and conception is generally low in several Asia Pacific countries

4

Up to **65%** **of respondents relied on the internet and social media as a source for their fertility information.** Certain sources of online media may be inaccurate, unreliable and biased.



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6

As high as **70%** of patients **switched treatment** locations, citing **a need for "caring, friendly" doctors and staff who can address their concerns with patience.**

7

Respondents experience an emotional roller coaster of negativity and positivity during the infertility journey. Unexpected emotional burden was significantly reported.

8

While financial support for fertility treatments is increasingly available in national healthcare schemes in Asia, **coverage for emotional support remains a missing piece.**

9

WHO: 1 in every 6 people

of reproductive age worldwide will experience infertility in their lifetime. Declining birth rates are now a concerning public health issue in many Asian countries with low total fertility rates (TFR**) significantly below replacement rate of 2.1.

10

Knowledge empowers

AMH† is a valid biomarker of a woman's ovarian reserve which can be measured through a simple blood test.

3 facts respondents wished they knew earlier

Infertility affects men and women. Test together, not alone.

A woman's egg quality and quantity decline irreversibly with age and time.

Despite medical advances, IVF success can still be age-dependent.

^ WHO = World Health Organization

** TFR = total fertility rate, standard demographic indicator used internationally to estimate the average number of children that a woman would have over her childbearing years (i.e. age 15-49)

† AMH = anti-mullerian hormone, fertility biomarker of ovarian reserve and value can differ between women

All information and statistics are extracted from the report "Real Voices, New Insights" published by Ferring Pharmaceuticals and Weber Shandwick, 2023.

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Contents

Introduction

Asia Pacific is currently home to more than half of the world's population; however, many Asians are having fewer children now than ever before.[1,2] Total fertility rates (TFR) in Asia have declined over the past decades, with several countries in the region reporting ultra-low fertility rates (**Figure 1**).[3,4]

Asia's low fertility rates are a reflection of the rapid change in social-cultural norms and lifestyles. More of the younger generation now have access to higher education and better career prospects, fuelling a shift to later marriage and parenthood across both genders. This coupled with the ongoing economic uncertainty has negatively affected the desire to have children in many Asian countries such as South Korea, Japan and Taiwan.[4]

The reduced fertility rates have significant economic and social consequences. Shrinking workforce and ageing populations will continue to further pressure socioeconomic productivity and healthcare systems.[5]

Quick Facts

- *TFR is defined as the average number of children that would be born per woman in her lifetime[3]*
- *A TFR of 2.1 is a healthy marker for maintaining a stable population*

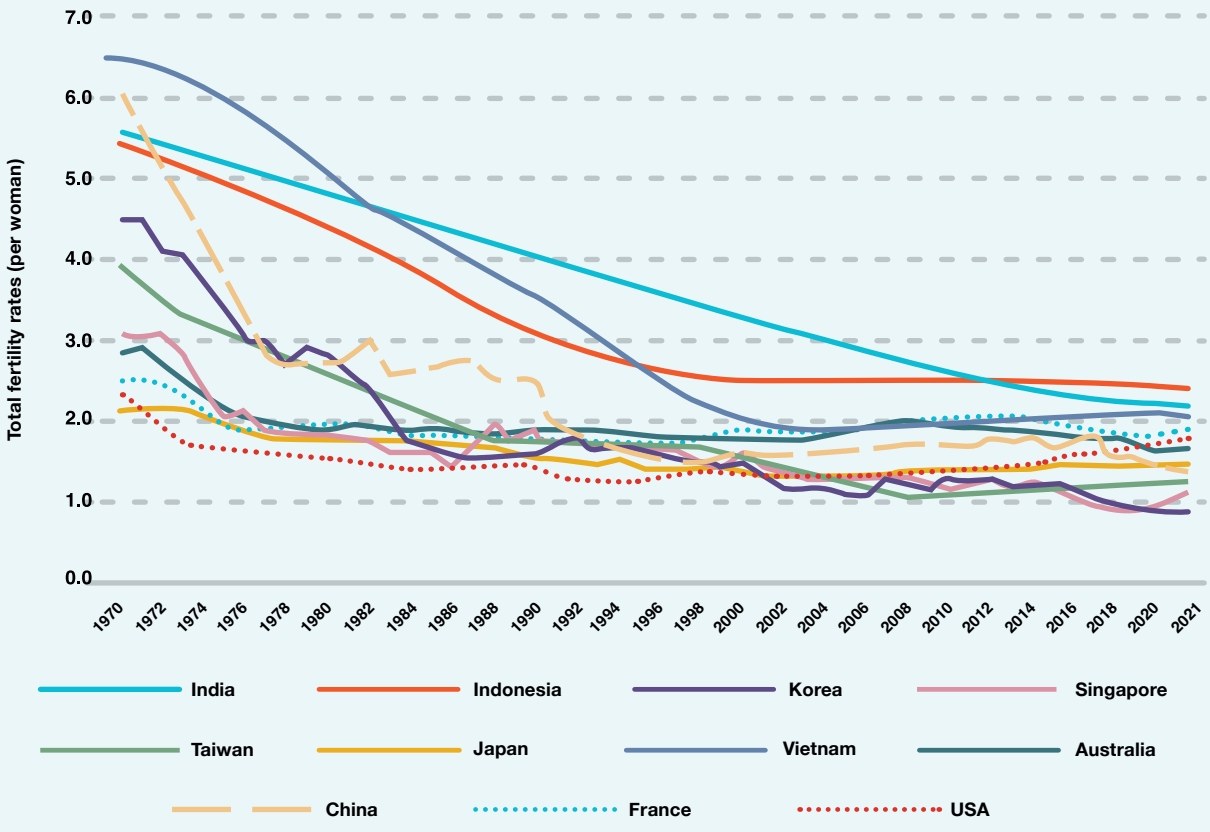

Figure 1. Total fertility rates of Asian countries surveyed in EUREKA (solid line) versus those of other major world economies (dotted line), 1970–2021[2,3,5,6]

TFR: Historic lows in 2022

0.78[a] 0.87[b] 1.04[c] 1.26[d]

Supporting references for 2022's TFR data

a. Statistics Korea. Preliminary Results of Birth and Death Statistics in 2022. Available at: *https://kostat.go.kr/board.es?mid=a20108100000&bid=11773.* Accessed Jul 2023. **b.** National Development Council, ROC. Low Birth Rate. Available at: *https://www.ndc.gov.tw/EN/Content_List.aspx?n=6F69D4E5D624660A.* Accessed Jul 2023. **c.** Department of Statistics, Singapore. Births and Fertility. Available at: *https://www.singstat.gov.sg/find-data/search-by-theme/population/births-and-fertility/latest-data.* Accessed Jul 2023. **d.** Ministry of Health, Labour and Welfare, Japan. Annual change in demographic overview. Available at: *https://www.mhlw.go.jp/toukei/saikin/hw/jinkou/geppo/nengai22/dl/h2.pdf. Accessed Jul 2023.*

The prevalence of infertility is also on the rise, with several contributing risk factors (**Figure 2**).[6,7] Poor awareness and a knowledge gap further deepen the crisis. In fact, infertility is now considered a public health issue, ranked as the 5th highest serious disability worldwide.[8]

Figure 2. Risk factors for infertility in men and women[6,7]

What is infertility?

Most people struggle with understanding infertility. The World Health Organization defines the condition as the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse.[9] Infertility can have many causes. Primary infertility is when a pregnancy has never been achieved, while secondary infertility is diagnosed after a prior pregnancy. While it affects both genders almost equally, women are often more likely to bear the social and psychological burden of infertility than men.[9,10]

More importantly, regardless of gender, it is important for couples who have trouble conceiving naturally to seek help as early as possible; waiting too long has a significant impact on success, more so among women over the age of 35 and those with risk factors.[11] Treatment options vary and may involve ovulation induction in women or assisted reproductive techniques such as in vitro fertilization, an increasingly common treatment where the woman's ovaries are stimulated to produce eggs, which are then surgically removed and fertilized with sperm in a laboratory environment. The resulting embryo is subsequently returned to the woman's body for possible implantation and pregnancy.[11]

Is this you, or someone you know?

Katy is a 38-year-old working professional from Singapore who has been married to her husband, Mark, since 2010. Katy and Mark have always wanted a large family and have been trying to have a child since Katy was 30.

Unfortunately, they found it difficult to conceive naturally due to health challenges. Katy has been living with polycystic ovarian syndrome (PCOS), and Mark with diabetes mellitus. After 2 years of trying, they finally decided to seek professional help.

After getting a referral to a public hospital, Katy and Mark began their fertility journey in 2012. Long waiting periods, lack of awareness about treatments and repeated tries – they soon realized there were multiple challenges to overcome in their desire towards parenthood.

What is the Fertility White Paper?

Everyone has a right to build a family, even in the face of biological and social barriers. The decision to have children is a personal one, and the dream of building a family – big or small – ought to be supported. Having the right information empowers people to make the right decision at the right time. Demystifying infertility allows thoughtfulness and empathy to grow within communities and workplaces. This would give everyone more opportunities to better support our colleagues, friends and families. Governments should also continue to be resilient in their efforts to address the deepening demographic crisis and support couples who embark on a difficult fertility journey.

This white paper aims to provide insights into the current landscape of fertility based on findings from a large-scale survey conducted across the Asia Pacific region, supported by various peer-reviewed publications and experts' opinion. It serves as a concise and informative resource to guide couples, the public and governments to better understand the fertility journey so that more can achieve their family-building dreams.

References

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CHAPTER 1
Time is of essence during the fertility journey

In Asia, the decline in fertility rates is significantly more pronounced than that observed in Western countries even though women across the world are generally having fewer births at a later age.[1] Countries such as Japan, Korea, Singapore and Taiwan now have among the lowest total fertility rate (TFR) compared with their global peers.[2-4] A lower-than-ideal TFR coupled with an ageing population creates a demographic crisis for many countries around the world.[5]

Waiting is not always the best option – early fertility treatment increases the odds of successful outcomes

Time is an important element in fertility. A woman's peak reproductive years are in her 20s, with fertility gradually declining after age 30, owing to age-related loss of both quantity and quality of her eggs. Though not as abrupt as challenges faced by women, changes in male fertility – such as decrease in sperm quality – occur in men too as they grow older. While fertility treatments such as assisted reproductive technologies (ART) are available, age greatly affects the success rates of fertility treatments, independent of other risk factors.[6]

The World Health Organization (WHO) defines infertility as failure to achieve pregnancy after 12 months of regular unprotected sexual intercourse, after which it is advisable for couples to seek fertility consultation.[7] The EUREKA survey, which reached out to patients and partners diagnosed with infertility across 7 countries in Asia, reported that respondents spent an average of 3.6 years trying to conceive naturally – over 3 times longer than the duration defined by WHO and this long waiting period was consistent across countries (**Figure 1**).[8]

The entire fertility journey, from deciding to have a child to diagnosis, treatment and eventual conception, took 6–8 years. The trend of waiting persists with an average time gap of 1.8 years between diagnosis and treatment, which was consistent across the different countries.[8]

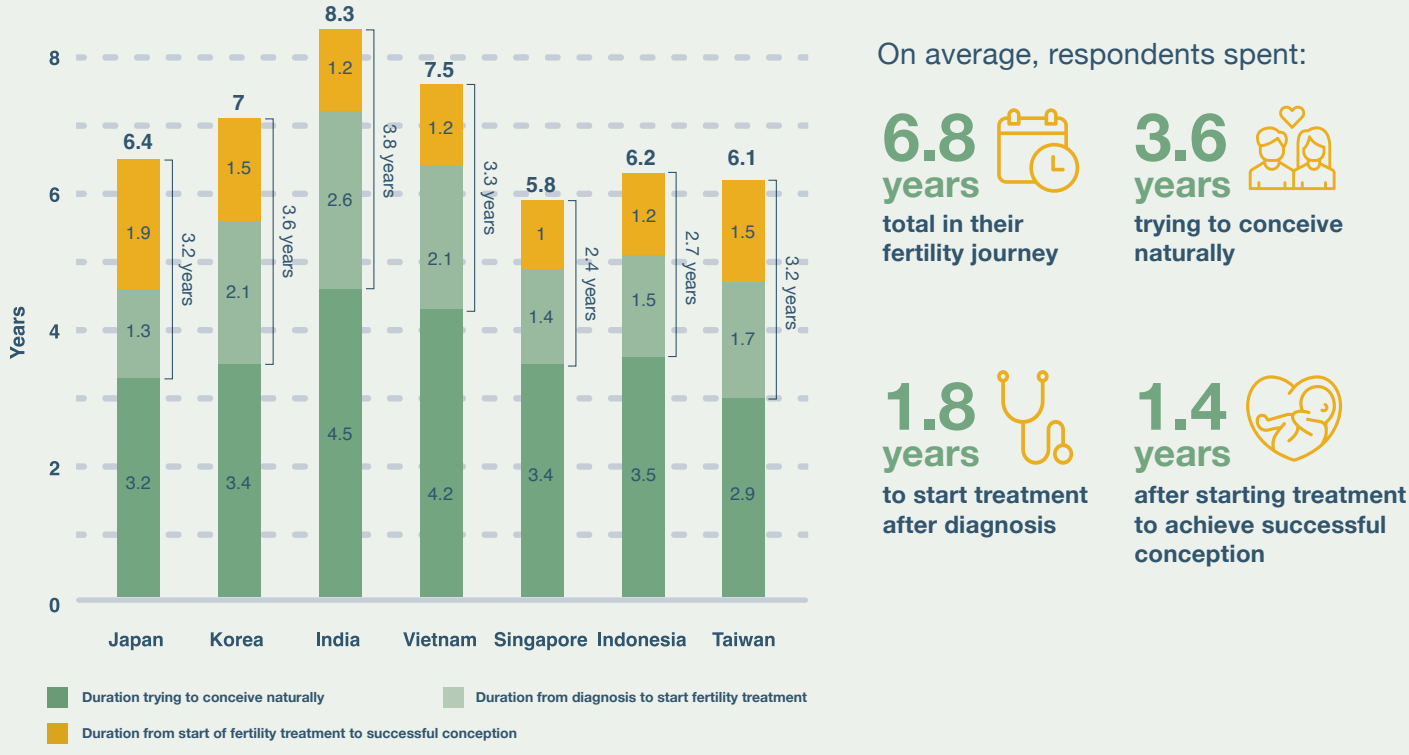


Figure 1. A snapshot of the Asian fertility journey, as reported by the EUREKA survey[8]

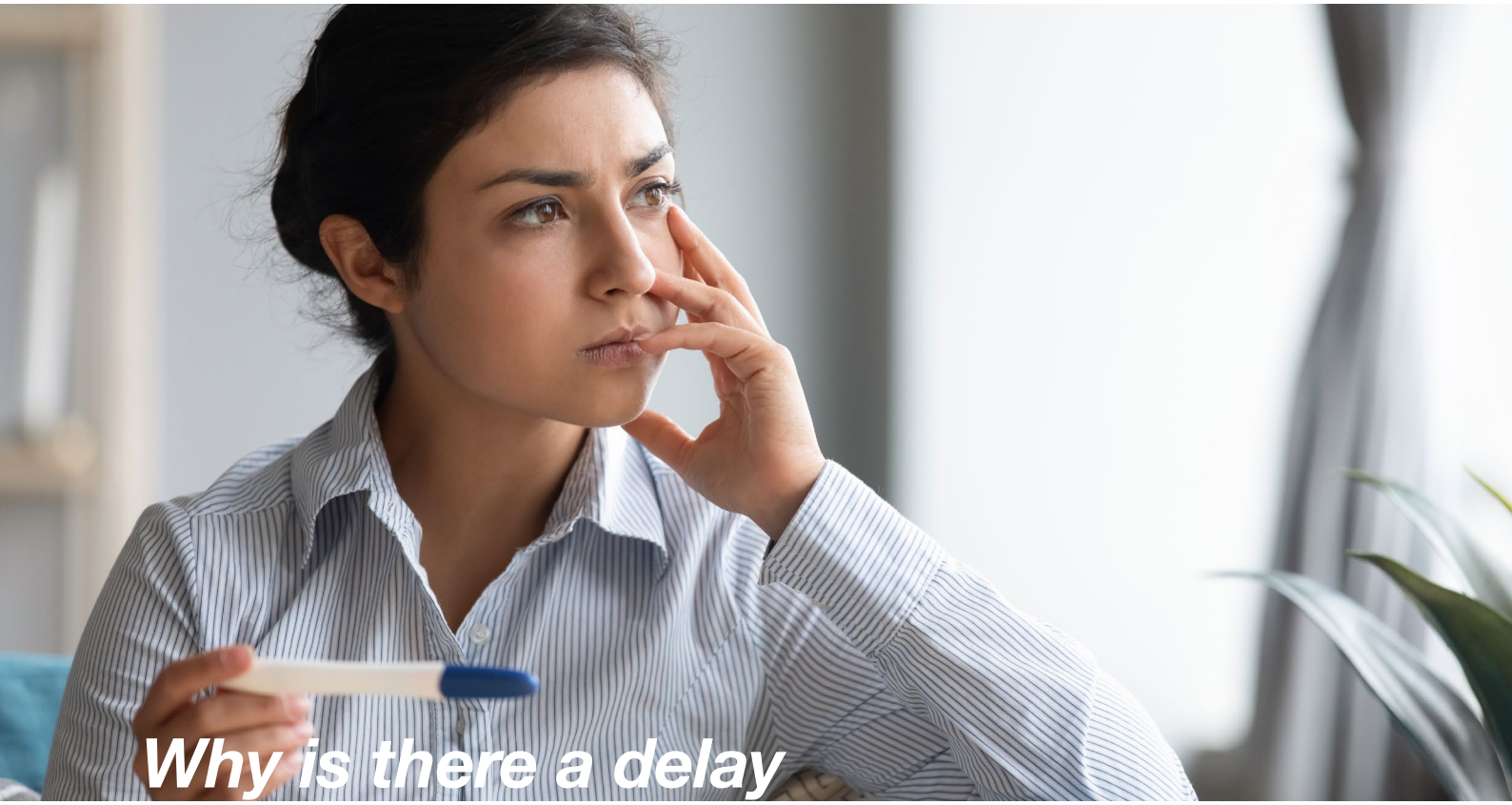
The tendency to deliberate and wait seems to be more common in Asia. Women in India waited up to 4.5 years in hope of achieving natural conception, 14.5 months longer than in Western countries.[8,9] Despite diagnosis and doctors' advice, it is not uncommon for Asian couples to continue to deliberate before starting treatment. In countries like Japan, Korea, Taiwan and Singapore, where different levels of government financing support is provided for fertility treatments, the EUREKA survey found that many still waited an average of 1.6 years before starting treatment.

Furthermore, couples in India, Vietnam and Korea continued to deliberate for over 2 years post-diagnosis before initiating treatment, much longer than those in North America and Europe.[8,9]

Waiting can be a stumbling block to treatment success. In Asia, the average marriage age has significantly increased over the years – rising from 26.8 to 32.5 years in Korea between 1995 and 2022, and from 28.3 to 31.8 years in Taiwan between 1995 and 2021.[10,11] As couples consider marriage and parenthood later in their life, delaying treatment post-diagnosis leads to a lower chance of success due to their older age.[9]

> A woman's age is an important determinant of fertility. With increasing age, both egg quality and quantity decline, especially after 35. By the age of 40, only 20–30% of those who wish to have a baby will be able to do so.
>
> *- Associate Professor Sadhana Nadarajah, KK Women's and Children's Hospital, Singapore*

A study of over 110,000 women undergoing one or more in vitro fertilization (IVF) cycles demonstrated that the first cycle success rate of live birth was lower among older women and continued to decline with increasing age. The study found **age** and **duration of infertility** were key pre-treatment predictors of success, emphasizing the need for couples to consider starting fertility treatments as early as possible to maximize their chances of success.[12]



Why is there a delay in the fertility journey?

To most, ***cost of fertility treatments*** can be a key barrier and yet, key factors in determining treatment cost are age and treatment effectiveness.[8,9] Less invasive methods, such as intrauterine insemination (IUI) are often less costly than advanced treatments such as IVF. Due to age-associated reduction in egg quality, many older women may require multiple rounds of treatment, which could result in higher costs.[6,13] Conversely, those who seek consultation earlier, at a younger age and with a better reserve and quality of eggs, are more likely to be successful with fewer treatment cycles, thus lowering the cost burden (**Figure 2**).[6,14]

There is an obvious and significant difference in terms of the success rate of IVF treatment at the ages of 35, 38 and above 40. In Taiwan, the biggest problem encountered by fertility physicians is that patients often seek help very late into their fertility journey, and some may have even waited for years after trying to conceive naturally.

- Dr Chen Mei-Jou, President of Taiwanese Society for Reproductive Medicine

In my practice, the average age of patients seeking fertility treatment is over 40. Time is extremely important as a woman's age is the most important factor that affects treatment success rates. According to SART data, the success rate of fertility treatment decreases after age 35 by 10–15% every 2 years, mostly due to diminished ovarian reserves.

- Professor Ji Hyang Kim, CHA University, South Korea

Maternal age directly impacts the success of IVF

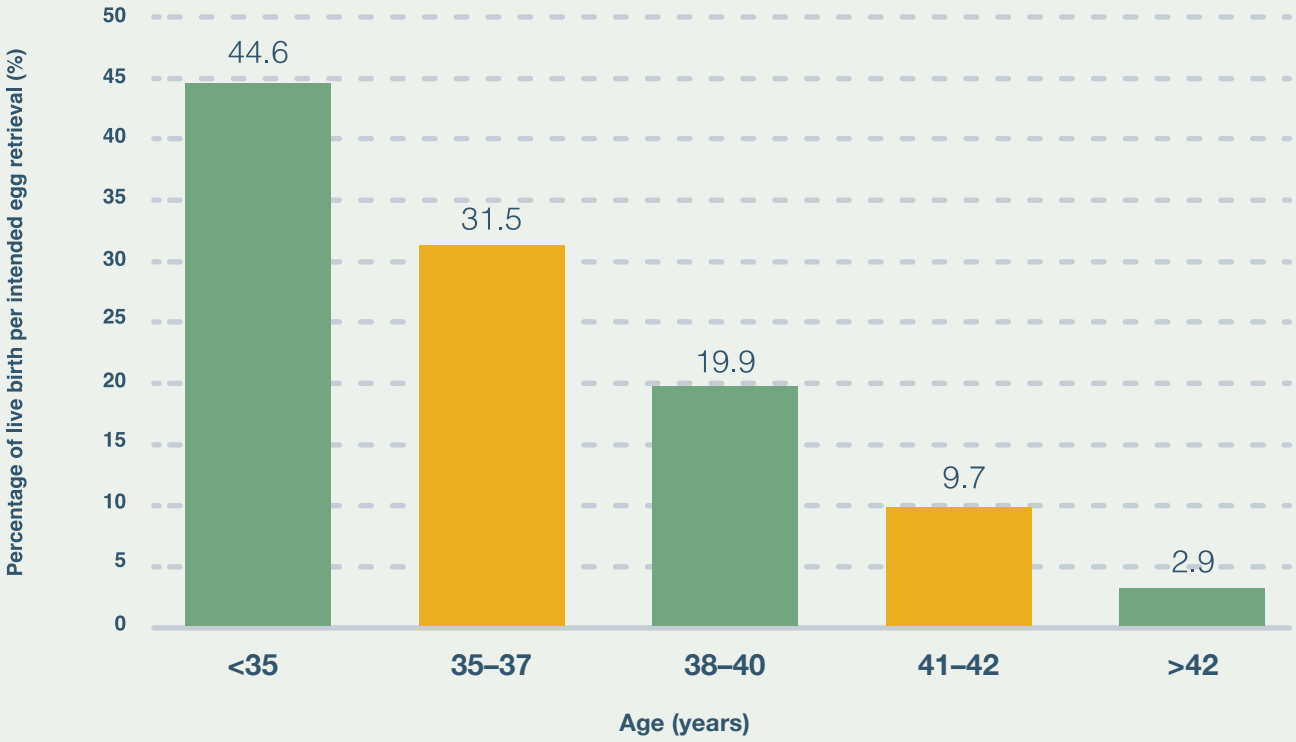


Figure 2. The success rate of IVF greatly diminishes with increasing age[15]

Cultural stigma may be another reason why couples do not proactively prioritize treatments. Sexuality-related topics and infertility remain sensitive in Asia, with open discussions of these subject matters generally avoided. Gender inequality in conversations surrounding fertility is also prevalent. In Asian communities, women often feel more pressure compared to their partners to bear children and can be frequently blamed for their failure to conceive.[8,16]

In Japan for instance, having children after marriage can be a social belief and expectation. These values are often internalized and women who are unable to meet such social expectations often experience psychological distress associated with infertility.[17] Similarly, many Asian women tend to conceal their circumstances and are less likely to seek fertility treatment.[18]

The "**wait and see**" mentality and a preference to conduct **self research** are also factors why Asian couples delay seeking treatment. The EUREKA survey found that only 6 out of 10 patients scheduled a second consultation after diagnosis to discuss treatment, with many preferring to pursue other options (**Figure 3**). Notably, over a third of patients, mainly from India, Japan, Korea and Singapore, did not take action post-diagnosis and adopted a passive, wait-and-see position instead.[8]

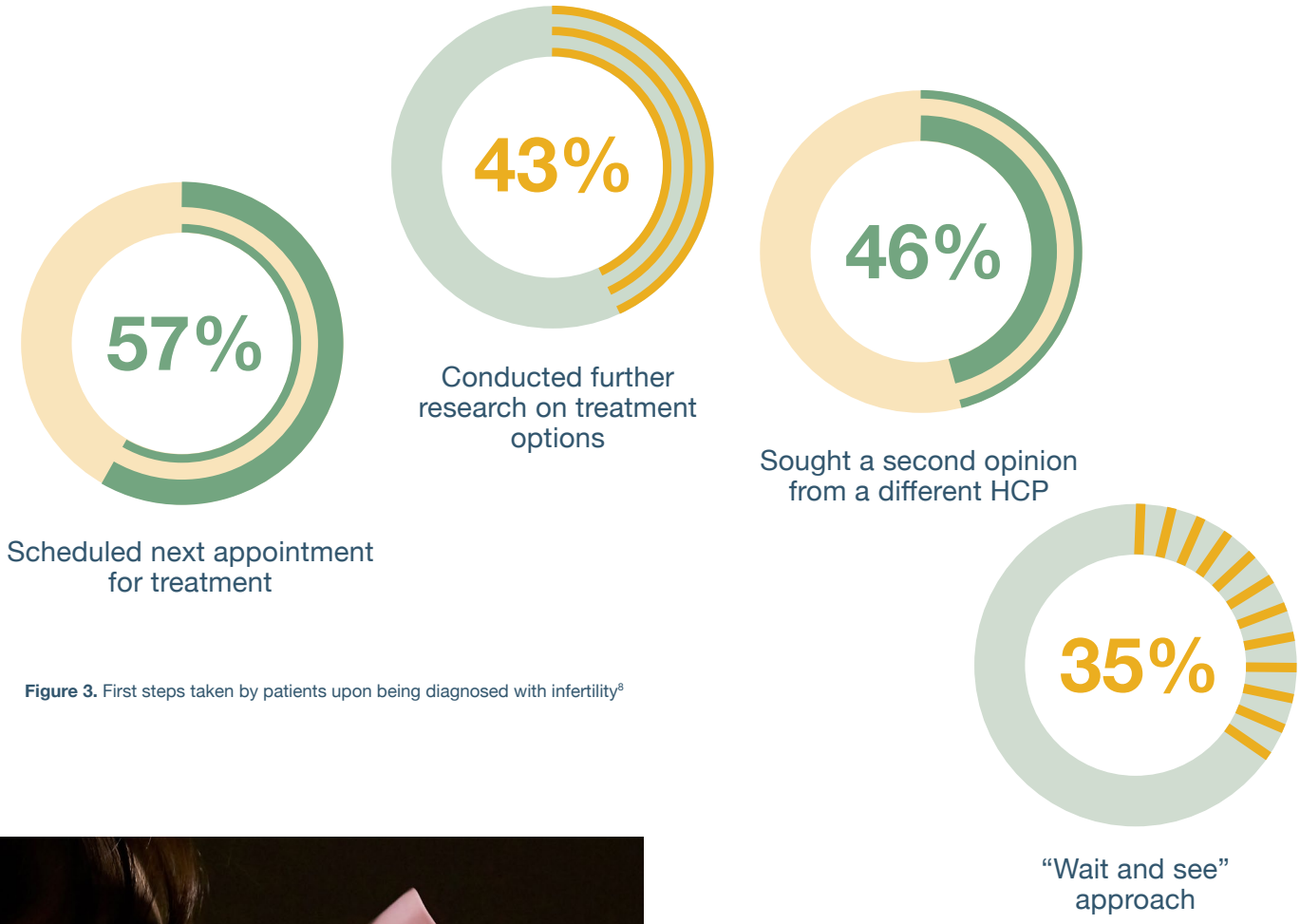


Figure 3. First steps taken by patients upon being diagnosed with infertility[8]

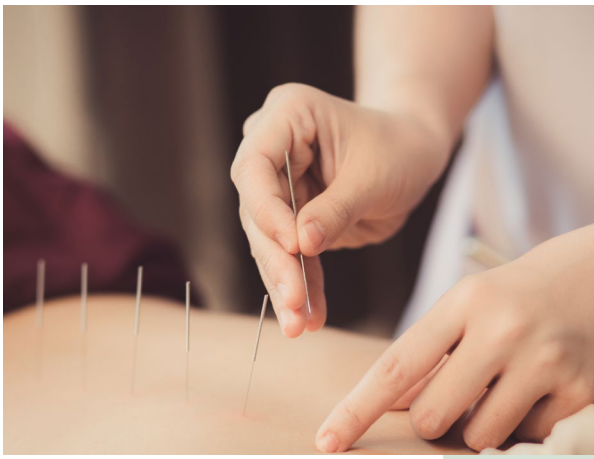
Misconceptions and Asian beliefs may also lead to delays in seeking treatment. Couples can be overtly optimistic about the chances of conceiving naturally – unaware that increasing age and various medical conditions will impact the chances of successful conception.

Some couples may not fully understand their condition or have a poor understanding of fertility concepts, which in turn may lead to ill-informed actions or considerations.[8]

Some reasons that patients have shared when they delay or decline fertility treatments include wanting to attempt natural conception, or alternative/natural treatments. Some young couples who are just starting their careers have also expressed difficulties in taking time off from work to attend medical appointments or undergo treatment.

- Associate Professor Sadhana Nadarajah, KK Women's and Children's Hospital, Singapore

Of interest, the EUREKA survey found that 42% of women in Asia preferred to try complementary and alternative medicines before seeking medical treatment.[8] In Taiwan, over 60% of respondents tried alternative therapy such as acupuncture or moxibustion for an average of 13.5 months before seeking medical help.[19] Mirroring this, Korean respondents also frequently explored alternative therapies, either as an addition to or a replacement of medical treatment. A Korean survey found that close to 64% of respondents used one or more alternative or complementary therapies during infertility treatment.[20]



I first tried Chinese medicine for my PCOS and irregular menstruation. Usually, treatment consists of either a liquid medicine or powder, which seems to be a milder form of treatment compared with Western medicine. With Chinese medicine, there is this expectation that you can improve your physical condition gradually, thus making it more ideal for conception.

- Ann, 36-year-old, Taiwan[21]

> TCM can help improve the overall physical and mental well-being of couples struggling with fertility. Physicians should engage TCM practitioners in a joint effort to educate the public and encourage couples to take action earlier in their fertility journey.
>
> *- Dr Suresh Nair, Monash IVF, Singapore*

While alternative treatments may work for some individuals, the length of time spent trying them needs to be considered by couples based on their age and personal medical condition. At times, delaying diagnosis and treatments may outweigh the potential benefits of complementary and alternative treatments. It is important to always consult a fertility specialist to obtain accurate and timely information on infertility issues to avoid unnecessary delays that may impact the chance of conceiving success.[22]

Many barriers may inadvertently lengthen the fertility journey

After seeking initial fertility consultation, Katy and her husband had to endure long waiting periods between each session (up to 3–6 months) to review their treatment progress. After 2 years and several rounds of treatment with clomifene without success, they attempted intrauterine insemination. Unfortunately, they were still unable to achieve conception and underwent a repeat cycle a year later before Katy switched to IVF treatment at the age of 31.

Key takeaways

- Time is of essence in ensuring successful fertility intervention. It is important to always consult a fertility specialist early.
- Age significantly impacts treatment success. Couples who seek treatment earlier are more likely to be successful.
- Complementary and alternative medicine remains popular in Asia. While they may be effective, couples need to consider how much time is spent on trying these treatments without seeking medical advice as extended delays will significantly impact the chances of eventual treatment success.

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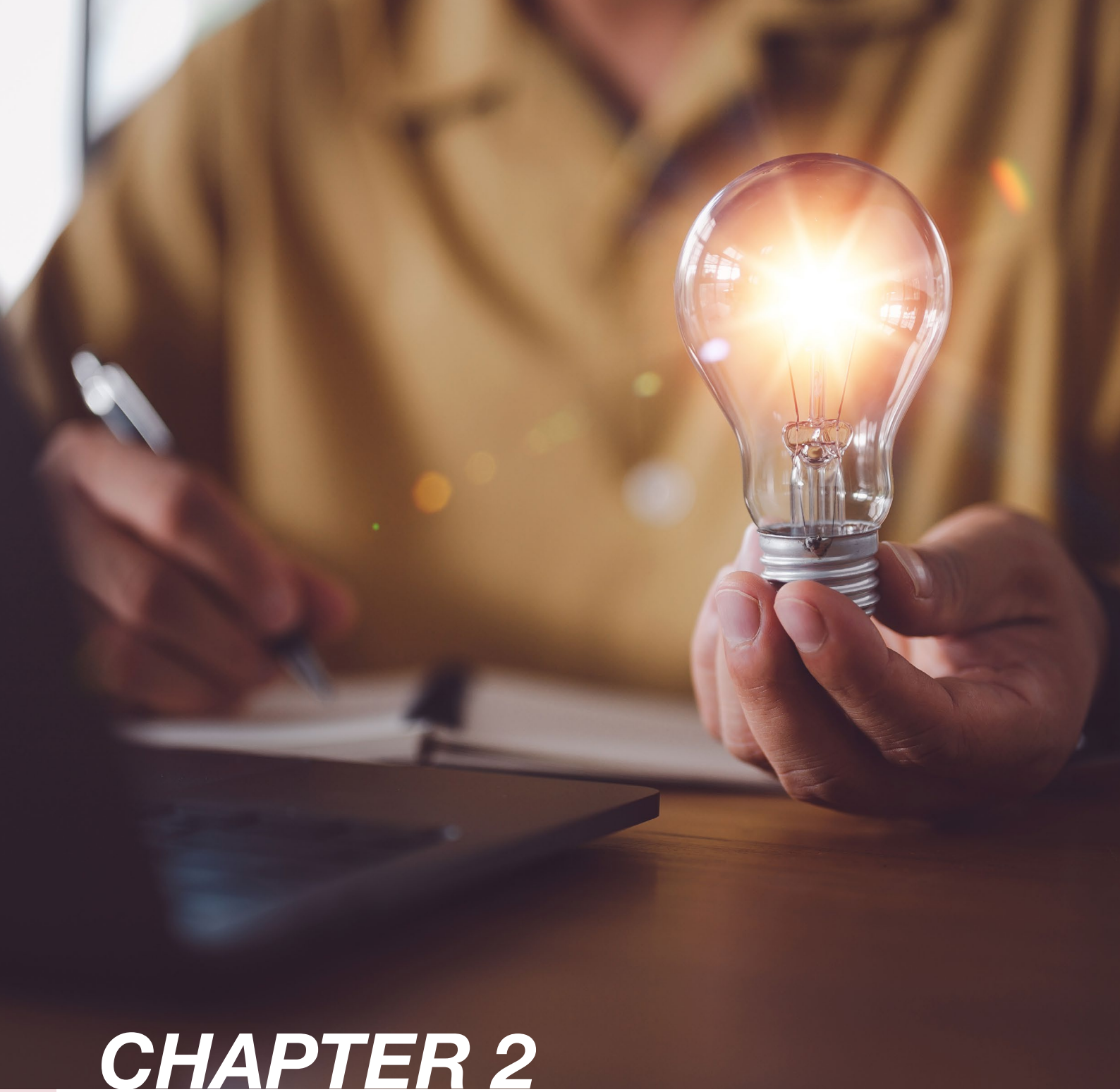


CHAPTER 2
Knowledge empowers the right decision

Increasingly, adults of reproductive age are delaying marriage and parenthood for numerous reasons such as higher education, career advancements and financial stability before starting a family.[1] Late parenthood leads to increased prevalence in infertility as physiologically, time and age impact conception success.[2] Awareness and knowledge play a key role in helping couples understand and recognize when to seek medical help.[1]

Awareness of fertility concepts among Asians is low

The EUREKA survey found that majority of respondents from Indonesia, Japan, Korea, Singapore and Vietnam self-reported a low-to-moderate knowledge of fertility and conception prior to their infertility diagnosis, despite a high proportion of them having completed tertiary education (**Figure 1**).[3]

More than 70% of respondents have low-moderate knowledge of infertility and conception

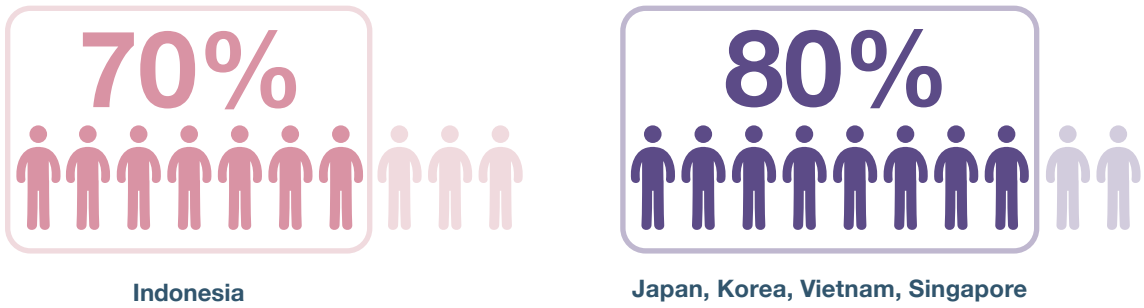


Figure 1. Self-reported awareness of infertility and conception is generally low in several Asia Pacific countries[3]

In Japan, Korea and Singapore, 40–46% of survey respondents were unfamiliar with a recognized fertility biomarker known as the anti-müllerian hormone (AMH). General awareness of assisted fertility treatments was also low, with an average of 1 in 4 having only heard of in vitro fertilization (IVF) by name, and respondents in Indonesia, Japan, Korea, Singapore and Vietnam having limited knowledge about it.[3]

The AMH test is a simple blood test that can be used as a reliable marker of ovarian reserve and ovarian response in women. While AMH value declines over time, suggesting the loss of egg reserve due to advancing age, AMH value can differ across women of similar age. This indicates that ovarian reserve differs from one woman to another. Knowing your ovarian reserve is an important step to understanding when you should start your fertility journey and your chances of success.[2,4]

Misconceptions and myths about fertility are prevalent. Many in Asia underestimate age-related fertility decline and overestimate treatment success rates.[5]

Based on the EUREKA survey, a significant proportion of respondents had various misconceptions. Many wrongly perceived that fertility problems occur more in women than men and were unaware that age can affect a women's egg quantity and quality. A quarter of respondents also did not know that women were born with a fixed number of eggs that they will ever produce, denoting a general lack of awareness of ovarian reserve and the impact of age and time on conception success.[3]

Top* common myths about fertility among Asians

- *Fertility problems affect women more than men*
- *Egg quality and quantity remain constant throughout reproductive years*
- *Fertility is no longer a concern if one already has a child*

**tested with respondents of the EUREKA survey*

Unsurprisingly, differences between perceptions of fertility and actual fertility lead to delays in seeking treatment and increased infertility prevalence.[6,7]

The EUREKA survey found that seeking the first medical consultation is often a joint decision between the couple, observed in all countries with the exception of Japan, where personal choice was rated slightly higher.[3] Both patients and their partners were unaware of key fertility concepts and thus, education is crucial for both women and men alike to support joint decision-making.[3,7]

One study conducted in Japan found that fertility education among partners accelerated births among couples, with women and partners who received fertility education being five times more likely to conceive successfully within a year.[8]

Men believe that issues with fertility stem from the woman as most of the pregnancy process takes place in her body. In Asian societies particularly, a man's fertility is often tied to their pride, and they are usually shocked when they are diagnosed with infertility.

- Professor Ji Hyang Kim, CHA University, South Korea

Knowledge is key to initiating steps toward successful treatment

Over 30% of respondents in the EUREKA survey indicated that it would be helpful to have a greater understanding of infertility and treatment options prior to diagnosis.[3] Access to accurate information and knowledge is key to starting treatment early and towards achieving successful conception.[6]

My husband and I were clueless at the start of our journey. Since our first two children were conceived naturally, we believed that we would easily succeed after just one attempt with ART. Only after multiple failures did we understand the processes better and learn that success rates are lower in older women.

- Judy, 40-year-old, Singapore

Knowing where to go for information is important. The EUREKA study revealed that many rely on online sources such as websites and social media. Both primary care practitioners and specialists are also key in providing information on fertility and treatment options.[3] The quality and accuracy of information vary across sources, and couples should equip themselves with the right knowledge to support better decision-making (**Figure 2**).

Top 3* facts respondents wished they knew earlier after undergoing the emotional journey of infertility

i. Infertility affects both genders

ii. Oocyte (egg) quantity and quality decrease with age

iii. Infertility treatment success can be age-dependent

**tested with respondents of the EUREKA survey*

> It is important to educate the public that fertility issues, including secondary infertility, affect both women and men in equal measures.
>
> *- Dr Chen Mei-Jou, President of Taiwanese Society for Reproductive Medicine, Taiwan*

> In men, sexual virility is often mistaken as a marker of fertility and this is a misconception.
>
> *- Dr Suresh Nair, Monash IVF Singapore*

Healthcare professional[3,9,10]

- ✓ *Deemed most meaningful by patients*
- ✓ *Scientifically accurate and up-to-date information*
- ✗ *Limited accessibility depending on a country's healthcare infrastructure*
- ✗ *Speed of access and cost can be limiting*

Online websites[9,10]

- ✓ *Easily accessible and numerous sources available*
- ✓ *Certain websites (e.g., those managed by healthcare authorities and the medical community) provide reliable information*
- ✗ *Can be difficult to identify credible sources*
- ✗ *Information may be inaccurate or biased*

Social media[10,12]

- ✓ *Easy and speedy accessibility*
- ✓ *Source of emotional support*
- ✗ *Information may be inaccurate or biased*
- ✗ *Privacy can be compromised*

Support groups[10,12]

- ✓ *Able to obtain a sense of relatability due to similar experiences and better awareness*
- ✓ *Source of emotional support*
- ✗ *Information may be anecdotal or unfounded*
- ✗ *Difficult to identify credible sources of information*

Figure 2. Main sources of information on infertility among Asian patients[3,9-12]

Seeking information online

Increasingly, move individuals prefer the internet as a source of information owing to its accessibility and privacy.[9]

The EUREKA survey found that close to 70% of respondents in India and Indonesia, along with 42–55% of those in Singapore, Korea, Japan and Vietnam, used websites as a key information source. Furthermore, social media was also widely relied upon as around 6 in 10 respondents in India, half of those in Vietnam, Korea and Indonesia, and 4 out of 10 respondents in Singapore reported using it to obtain fertility-related information.[3]

While convenient, information on these digital channels can be unregulated, inaccurate or biased.[10] A study found that 40% of information posted on websites and social media regarding fertility and pregnancy were inaccurate.[11]

> Many patients would search for information online prior to attending the clinic and some would even request to be prescribed specific medications. There is a risk that patients may be negatively influenced by incorrect information and deny the prescribed treatment.
>
> *- Professor Ji Hyang Kim, CHA University, South Korea*

> It is important to provide patients with diverse perspectives. Healthcare professionals can provide objective medical information about treatment options, side effects, and treatment records, while peers with similar experiences can provide additional support.
>
> *- Yasue Nosohara, President, Fertility Information Network, Japan*

Certain online sites provide more reliable information. These include government and condition-specific support organizations' websites, as well as medical journals.[10]

Identifying and using reliable web-based resources will reduce the risk of inaccurate information and unfavorable healthcare decisions.[9]

Engagements with healthcare professionals are most impactful and meaningful

Many respondents of the EUREKA survey reported that information received from their doctors and healthcare teams were most meaningful during their infertility journey.[3]

In addition to being an accurate source of information, healthcare professionals can amplify their knowledge sharing to support couples to make more informed decisions.[12] Over 50% of respondents from Japan, Korea, Vietnam and Singapore deemed receiving support from their healthcare team to be the most valuable.[3] It is thus important for healthcare professionals to fully utilize their role as a key information source to build a positive doctor–patient relationship and strengthen patients' self-confidence, perception and motivation towards their condition.[13]

> Couples need to know when and how to seek fertility assessment. More can be done to create greater awareness such as via social media platforms and public forums.
>
> *- Professor Sadhana Nadarajah, KK Women's and Children's Hospital, Singapore*

> It is important to provide patients with support based on diverse perspectives. Healthcare professionals can provide objective medical information about treatment options, side effects, and treatment records, while the presence of peers with similar experiences can provide additional support or emotional care from a familiar standpoint.
>
> *- Yasue Nosohara, President, Fertility Information Network, Japan*

Addressing the knowledge and awareness gap in the younger generation early on

The low awareness of fertility-related concepts across both genders despite a general high educational level could be attributed to the lack of exposure to knowledge of sexual health and the physiological aspects of fertility.[5] Governments should consider appropriate early education to better empower the younger generation, as they move into adulthood, to consider parenthood at the right time before it becomes too late.[7,14]

Multiple factors influence

the decision to start fertility treatments

For most, acceptance that natural conception will be difficult drives motivation to start fertility treatment, reflecting the importance of awareness to spur action. This was observed in many respondents of the EUREKA survey, particularly those from Japan, Korea, Singapore and Taiwan.[3]

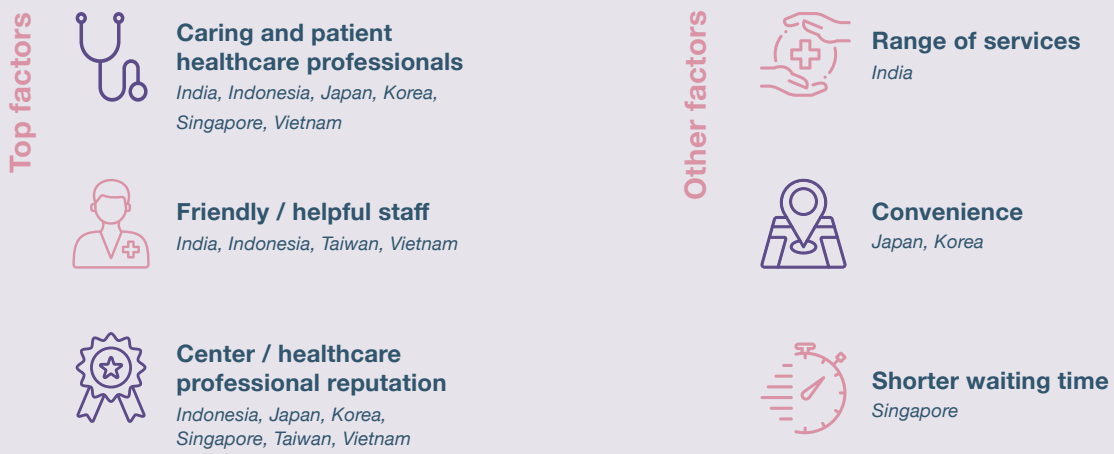
In Indonesia and Vietnam, a high proportion of respondents attributed the sufficiency of information from their doctors as a key driver to initiate treatment upon diagnosis, highlighting the significance of the patient-doctor relationship in influencing decisions. Continuing treatment was, however, driven by other factors such as partner and workplace support, which were seen as important in India, Indonesia and Singapore.[3]

> My criterion for deciding where to have my fertility treatment is whether the doctor is empathetic towards their patients. Do they speak to patients in a gentle way, and are they willing to listen and communicate.
>
> *- Lisa, 36-year-old, Taiwan*

Attributes of the treatment facility and the respective healthcare teams also influenced the treatment journey. From the EUREKA survey, respondents considered a variety of factors in their choice of treatment venue. Of these, other than the expected treatment-related attributes of reputation, credibility and cost-effectiveness, many reflected interpersonal experiences and expectations of caring and friendly doctors and staff as key drivers (**Figure 3A**).[3]

An average of 62% of respondents also switched treatment locations during their treatment journey. This was highest in India, Indonesia and Vietnam, with over 70% having done so. Switching treatment location can be disruptive, contributing to further delay and undue burden on health resources.[15] Institutions may be keen to further evaluate the reasons behind such high switch tendency. Notably, the inability of healthcare teams to address patients' concerns was one of the top factors for patients to switch treatment location, highlighting a knowledge gap and emphasizing the need to address concerns raised by couples appropriately as a priority (**Figure 3B**).[3]

A Factors involved in selecting a treatment venue



Note: Respondents from countries listed under each factor selected the indicated factor as one of their top 3 considerations when choosing a treatment location

B Top factors for switching locations

Note: Respondents from countries listed under each factor selected the indicated factor as one of their top 3 considerations for switching treatment location. Additionally, respondents in Indonesia also chose 'friend/family recommendation' and those in Taiwan 'treatment failure' as well as 'doctor is not friendly enough'.

Figure 3. (A) Key factors considered in the selection of a treatment venue; **(B)** Top reasons for switching treatment locations[3]

After experiencing initial treatment failure and having a better understanding of IVF, we decided to go with a more customised approach by engaging a private practice doctor who would spend more time to work hand in hand with us. This did result in higher costs, more tests and more time, but it was worth it at the end of the day.

- Judy, 40-year-old, Singapore

Be together sooner. Make the right decision, now

If you have been trying without success, it is important *to be aware that infertility affects both men and women equally.*

Getting medical advice early as a couple prevents unnecessary delays. The success of fertility treatment is often age-defined and timebound.[3,7]

There is never a right time, but knowledge empowers you to make informed decisions and avoid unnecessary pain points in the future!

Key takeaways

- Majority of couples have limited knowledge of fertility and conception.
- Access to accurate information is vital for couples to make informed decisions for the best possible chance of success. Early education can support better considerations of parenthood at the right time.
- Healthcare professionals provide the most meaningful and impactful information and support. A positive patient-centric experience is an important driver for starting and continuing treatment.
- A positive patient-centric experience is a key driver of venue selection for individuals undergoing fertility treatment.

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CHAPTER 3
Individuals on the fertility journey require emotional support

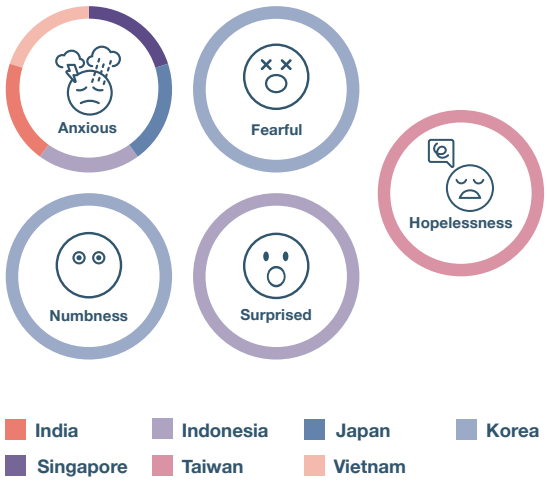
The experience of infertility is difficult to express as it is a highly personal and emotional journey. While a great deal of attention has been given to the physical aspects of infertility, the psychological consequences associated with the condition are often overlooked.[1]

The fertility journey is often characterized as an emotional roller coaster

Research shows that individuals diagnosed with infertility experience higher levels of depression and anxiety compared with the general population – some may even experience levels of depression comparable to that seen in newly-diagnosed cancer patients.[2] Psychological factors are among the most frequently cited reasons for patients dropping out of fertility treatments, often in the earliest stages of treatment.[2]

The EUREKA survey found that couples often struggled with high levels of emotional strain. Negative emotions were expressed by both patients and partners at diagnosis (**Figure 1**).[3]

Top negative emotions at infertility diagnosis



**Indonesia and Korea reported equal proportion of two different emotions respectively.*

Figure 1. Top emotions reported by EUREKA respondents at diagnosis[3]

The EUREKA survey reported that respondents struggled with high emotional strain throughout the fertility journey.

At diagnosis, respondents reported a wide range of emotions, with top emotions dominated by anxiety, fear, numbness, surprise and hopelessness across the surveyed countries (**Figure 1**).[3]

In Korea and Japan particularly, instead of a singular prevalent emotion, 6 out of 10 respondents felt a broad range of negativity, which included hopelessness and depression, in addition to the emotions mentioned. An inability to accept their diagnosis, envy and frustration were also key emotions reported by respondents in Taiwan.[3]

> Fertility treatment does not guarantee conception or birth, and the feelings of infertile parties are often compared to riding a roller coaster. Couples often alternate between the anticipation for being able to get pregnant and the disappointment of not being able to conceive.
>
> *- Yasue Nosohara, President, Fertility Information Network, Japan*

During treatment, anxiety continues to be a dominant top emotion while exhaustion from the physical and mental strain grew, particularly in Japan and Korea. Amongst respondents from Indonesia and Singapore, optimism was a top emotion that emerged at treatment. Interestingly in India, respondents experienced a mix of negative and positive emotions in similar proportions, including a growing sense of disgust, fear, anger, optimism and feeling carefree while undergoing treatment. In Taiwan, the most prevalent feeling among respondents was envy, followed by a sense of being lost and frustration.[3]

Respondents often struggled with emotional strain or fear of fertility treatments

Unexpected emotional burden and fear were major pain points for respondents in their treatment journey (**Figure 2**). Fear was also cited as a primary reason against starting fertility treatment, particularly IVF, after respondents in Japan, Korea, India, Singapore and Vietnam receive their diagnosis.[3]

> While the intention of fertility treatment is to achieve a healthy baby borne to a healthy mother, couples should be cautioned that failure rate is high and the stress experienced (physical and psychological) during therapy may be significant for some.
>
> *- Associate Professor Sadhana Nadarajah, KK Women's and Children's Hospital, Singapore*

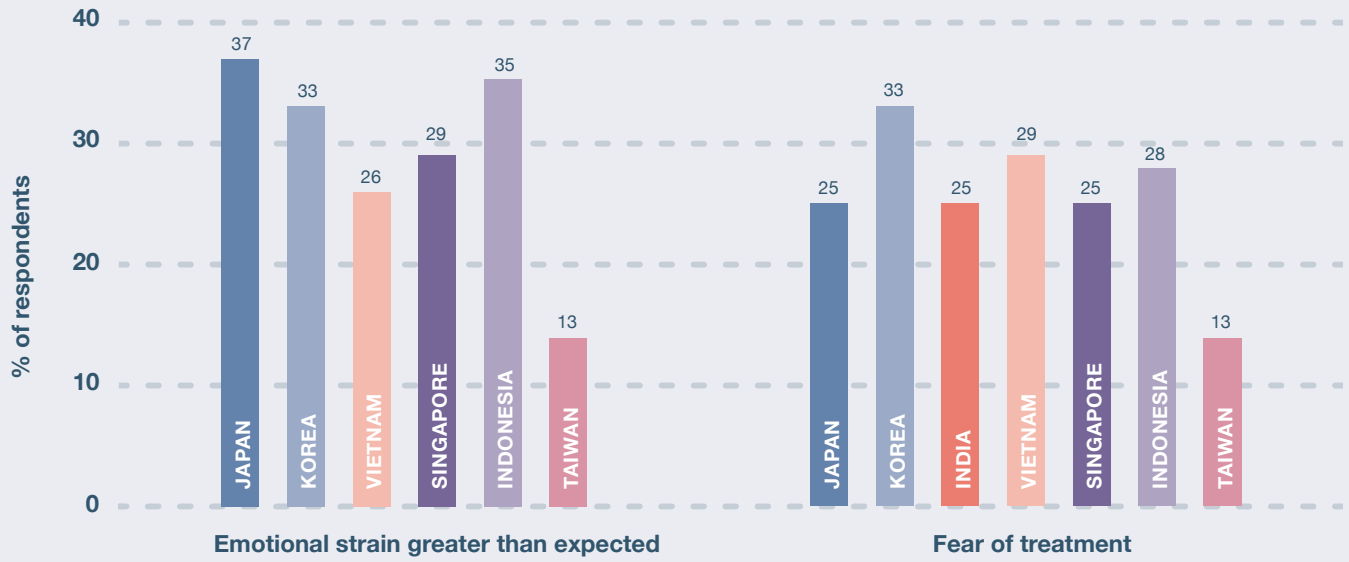


Figure 2. Emotional strain and fear are barriers experienced by EUREKA respondents who undergo fertility treatments[3]

The emotional journey is difficult, independent of treatment outcomes

A broad range of emotions are experienced during the fertility journey, as reported in the EUREKA survey. At all timepoints, there was a fluctuation between positive and negative emotions. In particular, even for respondents who achieved successful conception, considerable negative emotions continued to persist. The prolonged mix of emotions also affected respondents who initially failed but subsequently continued treatment. Notably, significant negativity was experienced by those who had no success and eventually discontinued treatment (**Figure 3**).[3]

A mix of positive and negative emotions experienced by both patients and partners

Figure 3. An 'emotional roller coaster' experienced by patients and partners of the EUREKA survey[3]

The emotional burden experienced by EUREKA respondents mirrored the findings of a 10-year follow-up Scandinavian study, in which many of the study's participants remembered the period of infertility as the most difficult time in their lives despite majority achieving IVF success with conception.[4]

Emotional distress can also discourage couples. A global study across 9 countries reported that patients often fail to start treatment after consultation or discontinue treatment before achieving their goals due to emotional strain. This was apparent even in countries where treatment cost were significantly covered by national health funding schemes.[5]

These findings highlight the need for governments and society to be aware of the emotional burden experienced by those undergoing infertility and provide better support to them at each phase of their treatment journey.

> The period of trying to achieve pregnancy is something that is hard to forget. All the injections, reviews, waiting, hope and anticipation. In many cases, couples would have to try again and again to succeed, and it gets even harder with each failure.
>
> *- Katy, 38-year-old, Singapore*

> Accept failure but keep trying. Some patients are afraid to fail, maybe they have failed their initial treatments, so they stop going for further consultations or follow-ups.
>
> *- Dr Chen Mei-Jou, President of Taiwanese Society for Reproductive Medicine, Taiwan*

Emotional strain on a couple's relationship and the need for partner support

Women undergoing fertility treatments shared that mutual support between partners was essential for their psychological well-being. However, many often feel that their partners cannot fully understand their situation,[6] with EUREKA respondents in Japan citing the lack of partner support as one of the top barriers experienced during fertility treatment.[3] In particular, women from Taiwan, Singapore and Indonesia considered partner support a major driver to continue treatment.[3]

The emotional journey also puts more pressure on the couple's relationship. In Taiwan, patients shared that their condition impacted activities of daily living and strained relationships with partners.[3] Studies have shown that couples seeking IVF treatment are more likely to report that their relationship has become unstable owing to the prolonged nature and demands of treatment.[7]

Partners also experience emotional strain in the fertility journey

The decision to seek medical consultation and start treatment for infertility is often a joint decision between the couple. Although the social burden of infertility falls disproportionately on women in Asian cultures, society also overlooks the impact of infertility on men. It has been reported that almost half of all male partners experienced 'worry' as a result of fertility treatment, and up to a third were diagnosed with anxiety.[8]

Similarly, in the EUREKA survey, partners also experienced a roller coaster of emotions. In Japan, close to 60% of men, in almost the same proportion of women, reported anxiety, depression and hopelessness at diagnosis. Half of them continued to mirror women in similar levels of anxiety and exhaustion during treatment despite common perception that women endure more physically during the treatment process.[3]

Korean respondents reported similar sentiments. Comparable proportions of men and women reported a range of negative emotions such as fear, numbness, depression and hopelessness when diagnosed with infertility. Men were as fearful as women during treatment and even reported more anxiety.[3]

In Singapore, men and women were equally anxious at diagnosis, but during treatment, men reported higher exhaustion than women, doubling from their baseline at diagnosis. Meanwhile in Indonesia, 1 out of 5 men were as anxious and surprised as women at the start of treatment. While women pivoted to optimism during treatment, men continued to feel anxious without achieving relief.[3]

Similarly, 38% of male respondents in Taiwan indicated that infertility harmed their mental health, highlighting that emotional burden on men is consistent across cultures and should not be viewed as insignificant compared to their partners.[3]

Male infertility may be even more stigmatizing, particularly in countries where discussions regarding infertility remain a taboo owing to society's expectations of masculinity and virility.[9]

Partners often feel excluded in the treatment process or find their concerns more easily dismissed by healthcare teams. While they experience their own struggles during the process, the expectation to provide the much-needed emotional support to their partner undergoing treatment further leads to accelerated feelings of isolation.[9]

Interestingly, the EUREKA survey observed several differences between patients and partners' emotional responses across different countries, depicting the emotional divide that may put further stress on a couple's relationship (**Figure 4**).[3] It is important to acknowledge these differences as the emotional burden experienced by men often directly impacts their ability to support their partners and joint counseling may not meet the different needs of both genders.[10]

JAPAN

Upon treatment success, anxiety subsided for women, turning into relief and surprise. However, men continued to feel as anxious as before despite the positive outcome.[3]

KOREA AND VIETNAM

Men were significantly more depressed than women after unsuccessful treatment.[3]

SINGAPORE

Men were more optimistic after treatment failure, while the predominant emotion in women was exhaustion.[3]

INDONESIA

When treatment failed, half of the female respondents remained optimistic, but only 8% of their male counterparts felt the same. Approximately 40% of men felt a range of negative emotions, including anxiety, anger, fear and disgust.[3]

Figure 4. Patients and partners on the fertility journey may react differently to treatment setbacks[3]

Emotional support remains a missing piece in many national healthcare schemes

Financial support is often limited to fertility procedures and their related treatment costs, while mental health support remains largely excluded (**Figure 5**).[11]

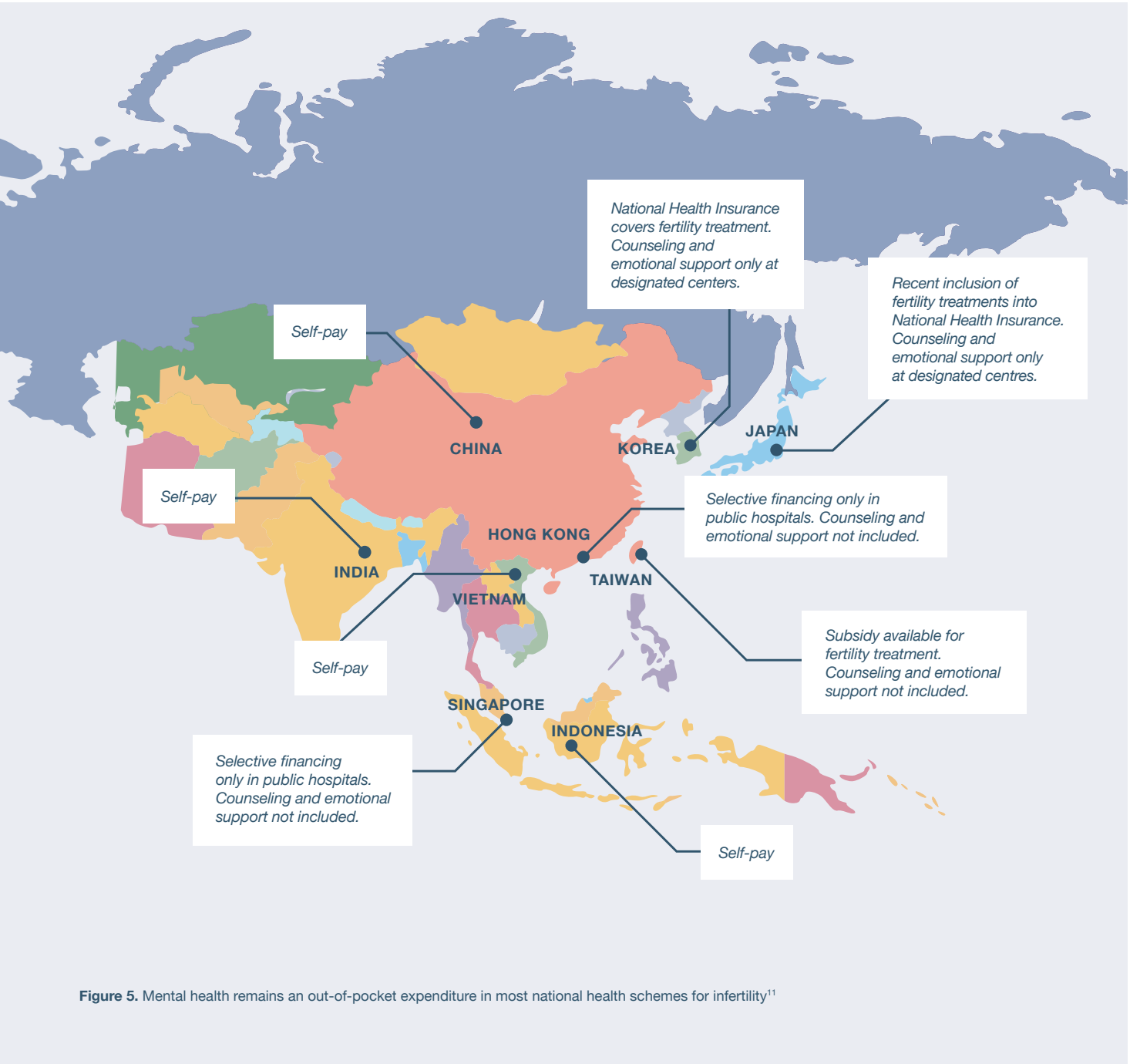


Figure 5. Mental health remains an out-of-pocket expenditure in most national health schemes for infertility[11]

Recognizing the growing need, countries have been proactively improving coverage systems. In 2019, the Korean government expanded financial support for couples undergoing fertility treatment, including lifting age restrictions and providing counseling services for depression, or other psychiatric problems related to infertility, at designated centers in the country.[12]

In Japan, an integrated public consultation system is being set up to provide specialist advice and emotional support to women who feel anxious while undergoing fertility treatment, and public health insurance programs have also begun to include such services.[13]

While the infrastructure for support is growing, efforts must be intensified to improve the public's awareness of such programs.

> The need for emotional support is how Fertility Support SG came about. We believe that couples struggling with fertility require so much emotional support on this very difficult journey, support that can only be provided by those who have also gone through the same hardships.
>
> *- Judy, 40-year-old, Singapore*

Emotional support is the greatest driver for continuing treatment

At present, mental health remains underprioritized in the treatment of infertility and the provision of emotional support from various sources is critical for couples struggling with infertility (**Figure 6**).[2,3] Additionally, authorities must explore strategies to build a more robust system for mental support to reduce the emotional burden of those in the fertility journey.

Research has shown that emotional support and information provided by healthcare professionals, in addition to their competence and accessibility, are important factors for patients dealing with infertility.[5] Healthcare institutions and physicians who are able to empathize and customize their approach to support the emotional journey will be increasingly more valued by patients and partners.

Society as a whole also needs to be more cognizant of infertility as a growing health issue. Communities should set aside prejudice and eliminate social stigma to support family and friends during this emotional journey to parenthood.

Sources of support during the fertility journey

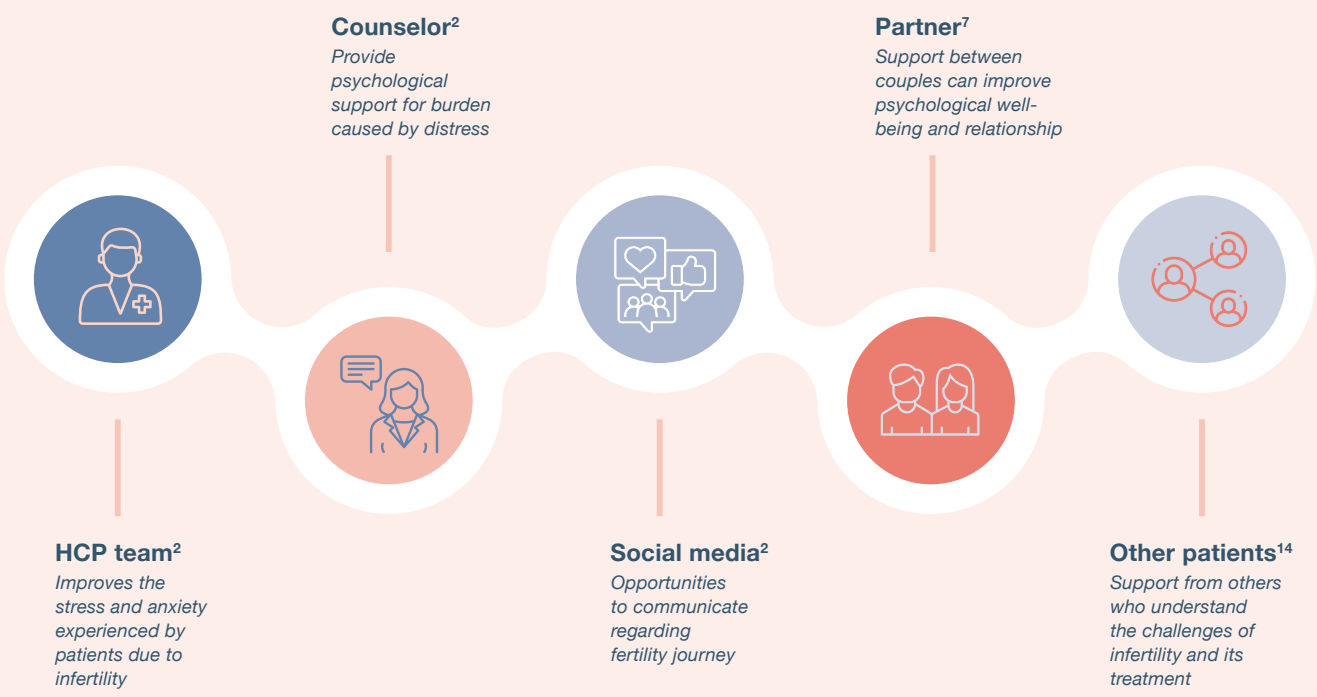


Figure 6. Various avenues for support throughout the fertility journey[2,7,14]

A strong mental health support system can reduce the sense of loneliness in the fertility journey. Importantly, it may confer a healthier perspective and help couples rebuild their resilience against pessimism or hopelessness. Individuals can also learn cognitive skills to better manage their emotions and progress on the fertility journey with a sense of empowerment rather than helplessness.

- Sharon Lim, Virtus Fertility Coach, Singapore

You can find support on the internet, patient groups, and societies. For example, there are many pregnancy preparation groups on LINE and clubs on Facebook. There are too many things that you need to know and the doctor may miss out on some important information. You can get very helpful information from other mothers in these groups.

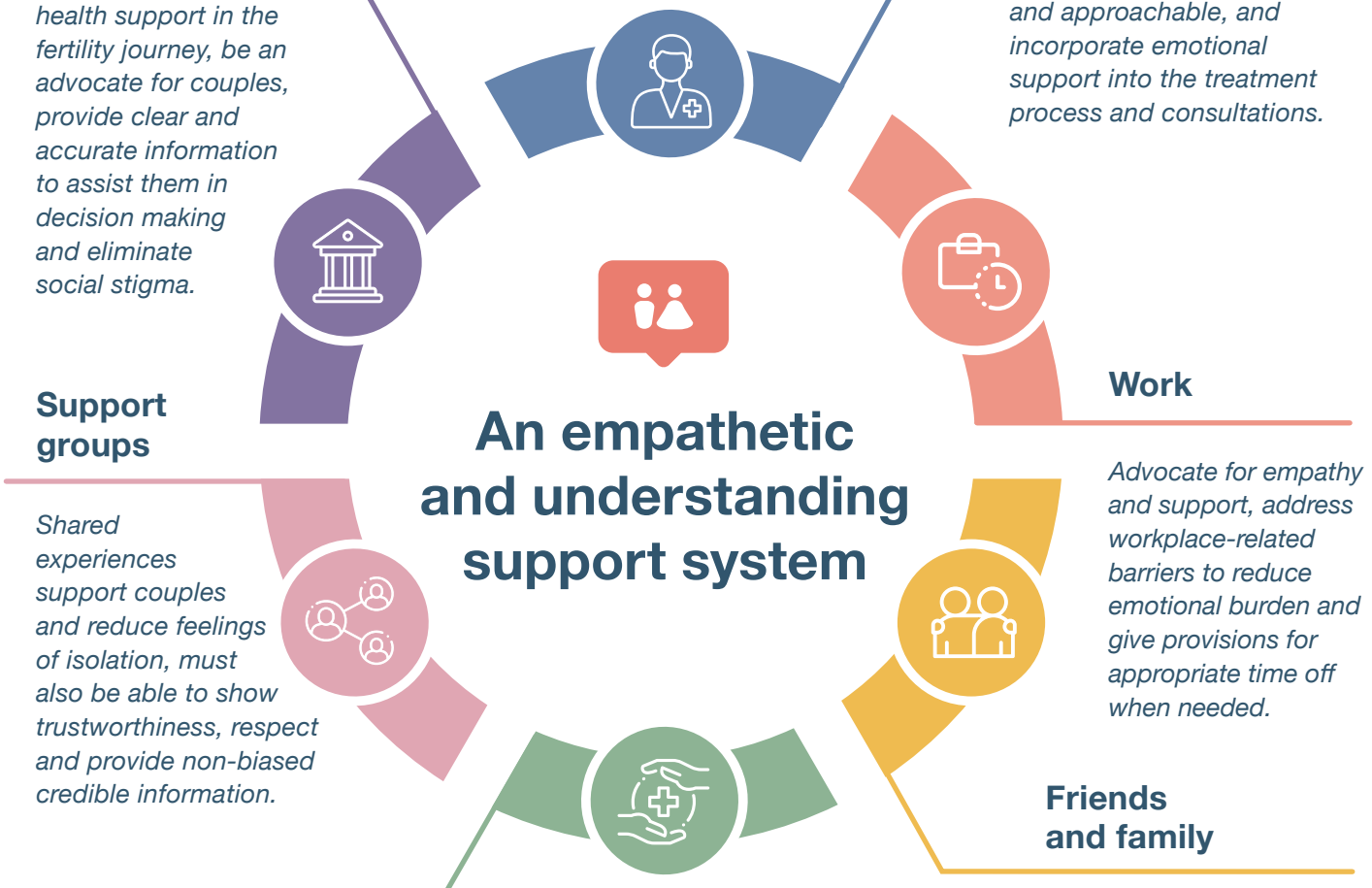
- Amy, 35-year-old, Taiwan

Ideally, medical institutions should actively refer each patient for further support. Couples should be informed that mental health services are available from the early stages of fertility treatment and that it is okay to seek help.

- Yasue Nosohara, President, Fertility Information Network, Japan

Characteristics of
an ideal support system for couples seeking fertility treatment:

Overall, healthcare providers often attribute their unintended lack of support to time constraints – resulting in rushed visits and overlooking patients' emotional complaints.[15] However, it should be acknowledged that this lack of support from healthcare providers may prompt patients to switch treatment centers, inadvertently leading to further delays in the fertility journey.[3] More importantly, a multi-stakeholder support system is key to supporting couples and alleviate the emotional burden experienced.



Healthcare teams and doctors

Look beyond the physical and physiological demands of fertility treatments, be empathetic and approachable, and incorporate emotional support into the treatment process and consultations.

Government

Financial assistance to cover mental health support in the fertility journey, be an advocate for couples, provide clear and accurate information to assist them in decision making and eliminate social stigma.

Work

Advocate for empathy and support, address workplace-related barriers to reduce emotional burden and give provisions for appropriate time off when needed.

Support groups

Shared experiences support couples and reduce feelings of isolation, must also be able to show trustworthiness, respect and provide non-biased credible information.

Friends and family

Have better awareness of fertility issues, debunk myths and misconceptions, be non-judgmental and show empathy.

Fertility coaches

An important source of emotional support that needs to be more accessible and affordable.

Key takeaways

- Couples diagnosed with infertility and undergoing treatments often experience an emotional roller coaster.
- Partners can experience different emotions from patients and are often overlooked without adequate support.
- Mutual emotional support is essential for the psychological well-being of couples and there is a need for national health schemes to recognize the importance of emotional support and include it in the funding scope.
- An ideal fertility support system should be all encompassing and involve various stakeholders who can be more aware of the emotional journey experienced by couples and are committed to being empathetic and supportive.

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CHAPTER 4
Embracing the future of the fertility journey

1 in 6 adults globally experience infertility, according to a recent report from the World Health Organization. Infertility rates are comparable between high, middle and low-income countries, with a prevalence of between 16.5% to 17.8%. This presents an issue for governments and communities worldwide to urgently raise awareness and widen access to safe, effective and affordable ways to attain parenthood for those who seek it.[1]

The infertility journey in Asia was significantly altered by the COVID-19 pandemic.[2,3] Governments, healthcare administrators and healthcare professionals must consider these learnings to be future ready. With the impact of time and age on fertility, it is important not to discount infertility treatments as optional since there may be an urgent need to proceed with treatment or risk failure.[4]

> Infertility does not discriminate.
>
> *- Tedros Adhanom Ghebreyesus, General Director, WHO*

COVID-19 has impacted
the patient journey

In part driven by imposed lockdowns and various concerns, the EUREKA survey found that more than 40% of patients in Asia were held back from starting treatments, especially in India, Vietnam and Indonesia.[2] A separate study conducted by a multi-national group of researchers across Asia Pacific reported that 57% discontinued treatment during the pandemic, with higher proportions reported in India (78%), Singapore (74%), Hong Kong (72%) and Thailand (72%). For some, the willingness to continue was restricted by access – in particular, 49% of Indian women and 30% of Korean women wanted to continue their fertility treatment during the pandemic but were advised not to do so by their clinics and doctors, reflecting country-specific pandemic infection controls and readiness during the period.[3]

For those who continued treatment, a strong desire of parenthood, importance of family, fear of age-related decline in fertility and trust in preventive measures were key drivers. Most patients, particularly women from India, Philippines and Vietnam who continued treatment, shared that it was a certain extent of change in their treatment centers and clinics that motivated their decision. These included good infection testing, better sanitation and flexibility in available consultation and treatment timings. While a high proportion of women who discontinued treatment expressed their willingness to resume, disruptions inevitably led to uncertainty, fear and further delays in the infertility journey.[3]

The pandemic also offered insights into greater efforts needed by healthcare teams and fertility clinics to provide empathetic care. A fundamental part of the patient journey — the patient-doctor relationship — suffered during this period. Affective empathy can improve trust, and communication between the doctor and patient is critical to offset the negativity and anxiety that patients experience during disruptions.[5]

Healthcare teams should provide timely information, reassurance about infection risks, address patients' concerns, and provide support during clinic closures and treatment disruptions.[3] Clinics should also consider active assessments of staff competence and conduct appropriate training for their teams so that they are able to deliver effective and empathetic interactions with patients in difficult or ambiguous circumstances.[3]

Changes in patient experience and acceleration of digital health have a lasting impact

During COVID-19, a number of Asian countries, as reported by the EUREKA survey, saw changes in the fertility treatment journey. Majority of survey respondents reported having to space out treatment cycles, going to consultations alone or having virtual consultations (**Figure 1**). Interestingly, a significantly high proportion of respondents in Japan (45%) and Taiwan (53%) reported that the pandemic did not impact their treatment in contrast to those from other countries.[2] Specific to Taiwan, this may be attributed to key reasons such as the readiness of clinics to deal with COVID-19, implementation of precautionary measures, ease of scheduling appointments, as well as accessibility to effective information and medical support.[6]

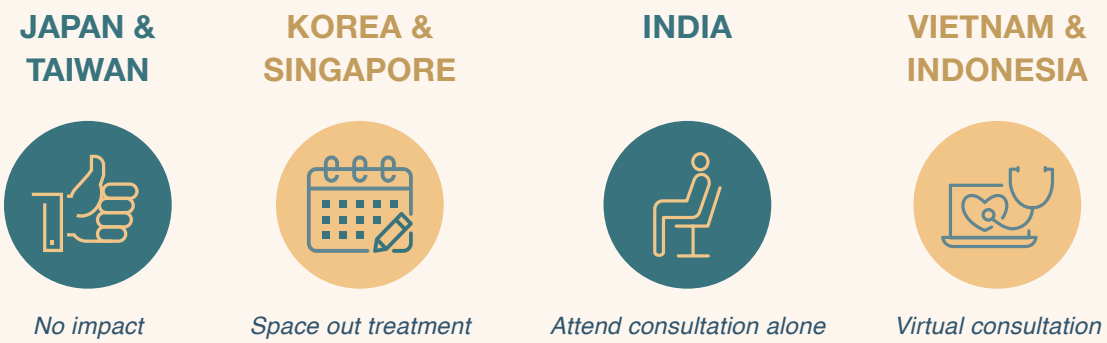

Figure 1. Top COVID-19 impact on fertility treatments[2]

The difficulty in accessing healthcare services during COVID-19 has accelerated digital adoption in many clinics and hospitals. As high as 65% of respondents in Vietnam and 59% in Indonesia pivoted to virtual consultations during their fertility treatment.[2] Some healthcare institutions and clinics remodified their processes, improving patient flow through digital means, with app scheduling of patient appointments or adapting a hybrid combination of telemedicine and face-to-face consultations to optimize efficiency and patient experience. While Singapore, Taiwan and Japan are currently leading the delivery of digital healthcare services, more can be done in other parts of Asia to drive equal access to technology and digital health innovations.[7,8]

The My Duc Hospital Experience

Although the COVID-19 pandemic led to difficulties in accessing fertility treatment, My Duc Hospital from Ho Chi Minh, Vietnam overcame these barriers by adopting digital solutions to improve patient experience and provide educational opportunities for their staff.

Using technology-assisted teleconsultations, doctors at My Duc were able to provide patients with optimized treatment plans that combined virtual consultations and actual hospital visits. Their treatment and follow-up care became more efficient, as patients who live further away were able to attend consultations without having to travel long distances. Since patients' health data were accessible via the hospital's digital health platform, the healthcare teams were able to seamlessly deliver consultations, increasing patient-doctor engagement and treatment continuity during the lockdown period. This also led to a decrease in the number of no-show cases.

Doctors also utilized digital tools to better illustrate treatment procedures to patients, supporting more to initiate their treatment right after the first consultation. Furthermore, the patient experience also improved significantly through the use of a patient app that provided better access to information on nutrition, self-care and guidelines for self-injections.

Internally, the mobile application supported e-conversations between staff; the increased exposure to technology gave the healthcare teams more confidence in using digital devices and platforms as part of their day-to-day work. Post pandemic, the staff at My Duc continue to use these platforms for case consultations, daily department meetings and to participate in specialized online IVF conferences.

The healthcare system

must be future-ready

Expectations of better patient experience and efficiencies through technology will continue to grow. Telemedicine in particular offers greater convenience, access and lower costs. Its usage is expected to accelerate in Asia, with 56% of physicians believing that more than 25% of their primary consultations will be delivered virtually by 2024.[9] Digital solutions will improve productivity for doctors, helping them to better screen, diagnose and manage patients.[8]

Specific to fertility, new innovations such as optimized in vitro fertilization (IVF) protocols, personalized treatment and better diagnostic tools can improve overall treatment success rate.[10] Many smartphone apps and web-based tools now increasingly support patients and partners with timely information regarding their condition, treatments, clinical processes, as well as practical psychological support.[11] Telemedicine can overcome geographical distances to provide better access and give partners an option to be virtually present. At-home sonogram technology may open up options for remote monitoring, while virtual technologies and artificial intelligence are continuously being explored to support virtual patient monitoring and clinical decision-making.[12]

The future will continue to deliver more secure, personalized and quality healthcare. As new tools, applications and programs for fertility clinicians and patients grow and evolve, these are expected to reduce barriers and alleviate current pain points. Rather than to expect old norms and practices to return post-pandemic, healthcare teams must embrace this new normal and continue to innovate to optimize patient care.[12]

> There are more digital health tools and apps available at present that help with various aspects of fertility.
>
> *- Dr Chen Mei-Jou, President of Taiwanese Society for Reproductive Medicine, Taiwan*

Key takeaways

- 1 in 6 adults globally experience infertility. This is expected to grow with reproductive care being essential and needing to be future-ready.
- The COVID-19 pandemic disrupted the fertility patient journey. Delivery of empathetic and supportive care enables treatment continuity, and patients expect doctors and clinics to react proactively to disruptions and challenges.
- Accelerated adoption of telemedicine and new technological innovations during COVID-19 have a lasting impact. Expectations have evolved for both patients and their healthcare teams. Moving into the future, hospitals and clinics need to continuously embrace technology and digital solutions to deliver quality patient care.

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