Article

Understanding Resilience Factors among High-Risk Groups Amidst the COVID-19 Endemic in Malacca

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Abstract: This study examines the factors influencing resilience among high-risk groups in Malacca, Malaysia, during the COVID-19 endemic. High-risk groups, such as the elderly and frontline workers, face unique challenges and vulnerabilities during the public health crisis, which has brought about significant socio-economic disruptions, psychological distress, and uncertainty. The residents of Malacca have been significantly affected by the endemic, potentially leading to diminished resilience among the population. The study aims to measure the levels of knowledge, family support, media exposure, optimistic thinking, and resilience regarding COVID-19 prevention among the at-risk groups in Malacca. Secondly, it aims to assess the relationships between knowledge, family support, media exposure, optimistic thinking, and resilience within this population. Thirdly, it seeks to identify the best predictor of resilience among these high-risk groups. A quantitative research design was employed to achieve these objectives. A total of 384 respondents participated in an online survey, revealing that optimistic thinking significantly contributed to increasing resilience levels, particularly among those anxious about their safety. Optimistic thinking also positively impacted coping abilities. However, family support and media exposure did not show significant associations with resilience. Developing holistic support systems that consider all factors affecting resilience, including knowledge, family support, media exposure, and optimistic thinking, is essential for high-risk groups in Malacca. This study offers valuable insights into the factors influencing resilience among high-risk groups in Malacca during the COVID-19 endemic. Integrating these findings into public health and social welfare initiatives can create a comprehensive approach to supporting vulnerable individuals during challenging times.

Keywords: High-risk group; public health; front liner; COVID-19 endemic; resilience

Introduction
The COVID-19 pandemic has emerged as one of the most significant global health crises in recent history, challenging healthcare systems, economies, and societal norms worldwide. The World Health Organization (WHO) has designated the COVID-19 endemic as a global public health emergency, drawing significant worldwide attention due to its rapid spread and varied disease severity. In response to the unique challenges posed by the COVID-19 pandemic, scholars and researchers have increasingly turned their attention to understanding the concept of resilience and its role in promoting individual and community well-being in

times of crisis. According to Micha et al. (2023) and Nadia et al. (2024), the COVID-19 endemic, unlike previous crises, has resulted in significant changes in individuals' lives, marked by ongoing uncertainties, financial strains, and social isolation. Consequently, students have been adopting a moderately unhealthy lifestyle, characterized by average eating habits, physical inactivity, and insufficient sleep. Consequently, this situation can impose a considerable psychological and emotional burden on many people. Despite the stress and anxiety associated with this endemic, Malaysian society often demonstrates a remarkable level of resilience during such challenging times. Moreover, when individuals confront life-threatening stressors, they must rely on interpersonal connections, foster relationships, and employ coping strategies to mitigate the impact of a public health crisis on their mental well-being. Kingman et al. (2023) suggest that understanding an individual's mental health outcomes and related factors can facilitate the provision of more targeted counselling and support, particularly for at-risk groups within Malaysian society.

Resilience, defined as the ability to adapt, bounce back, and thrive in the face of adversity, has emerged as a critical coping mechanism for individuals navigating the uncertainties and stressors of the pandemic. By examining the factors that contribute to resilience, researchers seek to identify strategies and interventions that can bolster individuals' capacity to withstand and overcome the challenges posed by the pandemic. Within the context of the COVID-19 pandemic, several factors have been identified as potential determinants of resilience, including knowledge, family dynamics, media exposure, and optimistic thinking. Knowledge about the virus, its transmission, and preventive measures is crucial for empowering individuals to make informed decisions and take appropriate actions to protect themselves and others. In this research framework, knowledge emerges as a crucial factor contributing to the promotion of resilience in behavioral intentions when faced with adversity. Lanfredi et al. (2023) suggest that given the multifaceted nature of resilience, focusing on personal knowledge from a cognitive perspective can shed light on the fundamental cognitive mechanisms involved in resilience development, particularly in navigating stress and adversity during the current endemic.

Additionally, family support and cohesion play a vital role in buffering individuals against the negative effects of stress and adversity, fostering a sense of belonging and security during uncertain times. Walsh (2021) emphasizes the significance of establishing a common goal and fostering a sense of interdependence among family members. Family resilience thrives on mutual support and care, wherein each member contributes to and benefits from the collective resilience of the family unit. A pivotal aspect of family resilience lies in providing assistance to one another during challenging times.

Moreover, the pervasive influence of media, particularly social media platforms, has shaped public perceptions and responses to the pandemic, influencing individuals' attitudes, beliefs, and behaviors related to COVID-19. While media exposure can provide valuable information and facilitate communication, it can also contribute to anxiety, misinformation, and social polarization, potentially impacting individuals' resilience and well-being. Amidst the COVID-19 endemic, Marzouki et al. (2021) observe a notable surge in media consumption, particularly through social media platforms. The ubiquity of media enables rapid dissemination of information, leading to heightened public curiosity and concern regarding COVID-19-related news and updates. It is hypothesized that social media exposure may influence individuals' thought processes and subsequently impact resilience levels during such crises. This study seeks to elucidate the relationship between media exposure and resilience levels, especially among high-risk groups.

Furthermore, optimistic thinking, characterized by a positive outlook and adaptive coping strategies, has been linked to resilience in the face of adversity. Maintaining a hopeful perspective and engaging in proactive problem-solving can help individuals navigate the challenges of the pandemic and cultivate resilience in the face of uncertainty. Resilience and optimistic thinking are closely intertwined, as noted by Rossi et al. (2023). Both concepts converge on the idea of how optimistic thinking contributes to fostering resilience and promoting overall well-being. Positive resilience and optimism play pivotal roles in daily life, offering benefits that enhance individuals' quality of life. Both constructs underscore the importance of cultivating resilience and adopting an optimistic outlook in navigating life's challenges.

Despite the growing recognition of these factors, there remains a need for empirical research to examine their interplay and impact on resilience during the COVID-19 pandemic, particularly within the

context of diverse cultural and socio-economic contexts. This study aims to address this gap by investigating the relationships between knowledge, family dynamics, media exposure, optimistic thinking, and resilience among high-risk populations in Malaysia during the COVID-19 endemic. By elucidating the factors that contribute to resilience, this research seeks to inform targeted interventions and support strategies for vulnerable individuals and communities, ultimately contributing to the collective resilience of society in the face of pandemics and other health crises.

This study aims to address the gap in empirical research by investigating the relationships between knowledge, family dynamics, media exposure, optimistic thinking, and resilience among high-risk populations in Malaysia during the COVID-19 endemic. The research objective as below:

RO1: To assess the levels of knowledge, family support, media exposure, optimistic thinking, and resilience pertaining to COVID-19 preventive measures among high-risk groups in Malacca.

RO2: To examine the relationships between knowledge, family support, media exposure, optimistic thinking, and resilience among high-risk groups in Malacca during the COVID-19 pandemic.

RO3: To measure the best predictor among the high-risk group resilience.

Literature Review

1. Knowledge

In scholarly discussions, knowledge is recognized as a critical component in building resilience, especially in times of adversity such as the COVID-19 pandemic. Ang et al. (2021) emphasize the significance of knowledge in cultivating confidence and resilience among individuals, particularly amidst the challenges posed by the pandemic. Those who possess a deep understanding of preventive measures are better equipped to protect themselves and others from the virus's effects. With this knowledge, individuals can take proactive steps to mitigate risks and safeguard their well-being, thereby reducing the likelihood of being adversely affected by the pandemic. Moreover, individuals with heightened levels of knowledge exhibit greater resilience, as they feel empowered to confront and navigate challenges effectively. This empowerment stems from their ability to make informed decisions and take appropriate actions in response to the evolving situation. Thus, knowledge serves as a cornerstone in fostering resilience, enabling individuals to adapt and thrive in the face of adversity.

2. Family Support

Family support serves as a fundamental pillar of resilience during the pandemic, as underscored by Karadeniz (2022). Positive familial relationships and robust support networks play a pivotal role in fortifying resilience among family members, offering them a sense of security and belonging amidst uncertainty. Within the familial context, individuals are provided with a nurturing environment conducive to the cultivation of optimistic thinking and adaptive coping strategies. By fostering open communication, empathy, and mutual assistance, families create an atmosphere of resilience that permeates through each member. This support network becomes especially crucial for high-risk groups facing heightened vulnerabilities, as they navigate the complexities of the pandemic. In times of crisis, the solidarity and cohesion within families serve as a source of strength, enabling individuals to confront challenges with resilience and determination. Additionally, positive family dynamics can foster a culture of optimism and adaptive coping within the family unit. When family members model optimistic thinking and problem-solving skills, it can encourage others to adopt similar attitudes and behaviors. This collective resilience-building within the family can serve as a protective factor against the negative effects of stress and adversity. Thus, family support emerges as a cornerstone in promoting resilience and well-being, offering a sense of stability and reassurance amid turbulent times.

3. Media Exposure

Xin & Ma (2023) highlight the complex impact of media exposure on individuals' responses to the COVID-19 pandemic. On one hand, the media plays a crucial role in disseminating important information about the virus, including updates on infection rates, health guidelines, and safety measures. This information is

essential for individuals to make informed decisions and take appropriate actions to protect themselves and others from the virus. Xin & Ma also point out that excessive exposure to pandemic-related media content can have negative consequences. For example, constant exposure to alarming news stories or sensationalized reports may fuel feelings of panic, anxiety, and uncertainty among individuals. This can exacerbate stress levels and contribute to a sense of overwhelm, making it difficult for individuals to effectively cope with the challenges of the pandemic. Therefore, Xin and Ma argue that media literacy and responsible consumption of information are essential in navigating the influx of pandemic-related news and mitigating its impact on individuals' resilience and well-being. Media literacy involves critically evaluating and interpreting the information presented in the media, questioning sources, verifying facts, and recognizing bias. By developing media literacy skills, individuals can better discern between reliable information and misinformation, reducing the likelihood of being overwhelmed or misled by sensationalized content.

4. Optimistic Thinking

Optimistic thinking, as highlighted by Kamaratih et al. (2023), serves as a robust coping strategy during adversities like the COVID-19 pandemic. Optimistic individuals tend to approach challenges with a positive mindset, believing in their capacity to overcome obstacles and find solutions. This optimistic outlook is closely associated with higher levels of resilience, as individuals are more inclined to engage in proactive problem-solving and adaptive responses to adversity. Importantly, optimism acts as a shield against uncertainty and anxiety, providing individuals with the mental fortitude to navigate the complexities of the pandemic with confidence and resilience. Moreover, optimistic individuals often maintain a sense of agency and control over their circumstances, empowering them to take proactive steps to protect their well-being and adapt to changing situations. Overall, optimistic thinking emerges as a vital psychological resource that enables individuals to maintain resilience and effectively cope with the challenges of the COVID-19 pandemic.

5. Resilience

Resilience, as defined by Astuti et al. (2023), represents the capacity to adapt, recover, and thrive in the face of adversity. It encompasses maintaining psychological and emotional well-being amidst challenging circumstances and utilizing coping mechanisms to navigate through tough situations. Recognizing the multifaceted nature of resilience and understanding its determinants is crucial for developing effective strategies to support individuals and communities in overcoming the adversities posed by the COVID-19 pandemic. By comprehensively understanding resilience and its underlying factors, policymakers, healthcare professionals, and community organizations can design targeted interventions and support systems to bolster resilience levels, ultimately promoting well-being and fostering a sense of empowerment among individuals and communities facing the challenges of the pandemic.

This study holds significant value in its investigation of the determinants of resilience among high-risk groups during the COVID-19 pandemic in Malacca, Malaysia. By scrutinizing the roles of knowledge, family support, media exposure, and optimistic thinking in fostering resilience, it offers crucial insights into how individuals and communities can effectively navigate the challenges posed by the pandemic. Firstly, understanding these determinants is pivotal for informing targeted interventions and support strategies aimed at bolstering resilience among vulnerable populations. This research addresses a notable gap in existing literature by comprehensively examining the combined effects of multiple factors on resilience levels within the pandemic context. By adopting a holistic approach and considering various determinants simultaneously, this study provides a nuanced understanding of resilience dynamics, particularly among high-risk groups in Malacca. Furthermore, its focus on these populations adds to its significance, as it aims to address the unique challenges and vulnerabilities they face. Ultimately, the findings of this study have implications for public health policy and practice, informing the development of evidence-based interventions to promote resilience and well-being among high-risk populations not only during the COVID-19 pandemic but also in future public health crises.

5. Conceptual Framework

Based on the previous study, the research has developed a framework wherein knowledge, family support, media exposure, and optimistic thinking are identified as independent variables, while resilience serves as the dependent variable. Figure 1, the conceptual framework suggests that these factors play distinct roles in influencing individuals' resilience levels during the COVID-19 pandemic.
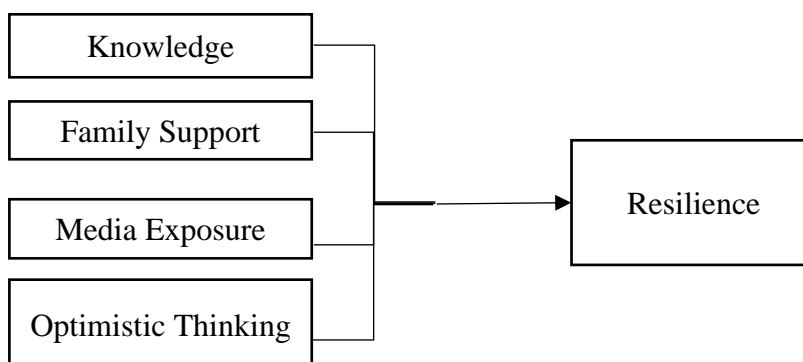

Figure 1. Conceptual framework of the study

Resilience is the main focus of the framework and serves as the dependent variable. It represents individuals' ability to adapt, recover, and bounce back from adversity, particularly in the context of the COVID-19 pandemic. Resilience is influenced by several independent variables. Knowledge refers to individuals' understanding of preventive measures, information about the pandemic, and general awareness of health-related guidelines. It is hypothesized that individuals with higher levels of knowledge will exhibit greater resilience, as they are better equipped to make informed decisions and take proactive steps to protect themselves and others. Family support encompasses the quality of familial relationships and the presence of supportive networks within the family unit. It is posited that positive family support can contribute to higher levels of resilience among individuals, providing emotional security, nurturing environments, and opportunities for adaptive coping strategies.

Media exposure relates to individuals' exposure to pandemic-related information through various media channels, such as news outlets, social media, and online platforms. While access to information is important for informed decision-making, excessive exposure to pandemic-related media content may have negative consequences, such as increased stress and anxiety. Media literacy and responsible consumption habits are expected to moderate the impact of media exposure on resilience. Optimistic thinking variable refers to individuals' positive outlook and proactive problem-solving approach in the face of adversity. Optimistic individuals are believed to exhibit higher levels of resilience, as they maintain confidence in their ability to overcome challenges and navigate uncertainties effectively.

Methodology

This study employed a quantitative research design utilizing a questionnaire as the primary research instrument to investigate the research problem and objectives. Cluster sampling was employed to gather data, with the study conducted specifically in Central Malacca (Melaka Tengah), a district within the larger region of Malacca. According to Barbu & Zhu (2020), cluster sampling involves dividing the population into clusters, which are groups of individuals who share similar characteristics or attributes. These clusters are then randomly selected, and all individuals within the selected clusters are included in the sample. This sampling method is particularly useful when the population is large and geographically dispersed, as it allows researchers to efficiently sample a representative subset of the population by targeting specific clusters rather than attempting to sample individuals from every part of the population. Data collection sites included Hospital Malacca, Mahkota Medical Centre Melaka, Pantai Hospital Ayer Keroh Malacca, Oriental Melaka Straits

Medical Centre, and Klinik Kesihatan Tengkera Malacca. These locations in Central Malacca were selected due to their accessibility to individuals belonging to high-risk groups.

The study enlisted a sample size of 384 respondents, drawn exclusively from the high-risk population of Central Malacca. This targeted group comprised individuals aged 60 years and above, including senior citizens, as well as frontline workers such as doctors, nurses, and hospital staff, who frequently interacted with COVID-19 patients. This questionnaire comprises six sections: demographic, knowledge, family support, media, optimistic thinking, and resilience. Participants respond to items in the knowledge, family support, media, optimistic thinking, and resilience sections using a 5-point Likert scale, ranging from (1) Strongly Disagree to (5) Strongly Agree. The variables measured align with the conceptual framework of this research.

Table 1. Variable in questionnaire

Section	Variable	Scale
A	Demography	-
B	Knowledge	5-point Likert scale
C	Family support	5-point Likert scale
D	Media exposure	5-point Likert scale
E	Optimistic thinking	5-point Likert scale
F	Resilience	5-point Likert scale

Table 1 displays the variables included in the questionnaire. For Section A: Demographic Information, this part is used to record the background details of respondents, including age, race, nationality, gender, religion, educational level, employment status, and marital status. For Section B: Knowledge, this segment comprises 7 items aimed at assessing respondents' opinions on whether knowledge influences resilience. Responses are measured on a 5-point Likert scale, ranging from (1) Strongly Disagree to (5) Strongly Agree. An example item from this section is "I know how to protect myself from being infected by the COVID-19 outbreak."

For Section C: Family Support, this part consists of 7 items designed to gauge respondents' opinions on whether family support affects resilience. Responses are measured on a 5-point Likert scale, ranging from (1) Strongly Disagree to (5) Strongly Agree. An example item from this section is "I receive good support from family members." For Section D: Media, this segment includes 7 items aimed at assessing respondents' opinions on whether media exposure affects resilience. Responses are measured on a 5-point Likert scale, ranging from (1) Strongly Disagree to (5) Strongly Agree. An example item from this section is "I receive news of the COVID-19 outbreak from social media."

For Section E: Optimistic Thinking, this part comprises 8 items intended to gauge respondents' opinions on whether optimistic thinking affects resilience. Responses are measured on a 5-point Likert scale, ranging from (1) Strongly Disagree to (5) Strongly Agree. An example item from this section is "I maintain a positive outlook despite the challenges posed by the COVID-19 pandemic." For Section F: Resilience, this segment includes 7 items aimed at assessing respondents' opinions on whether resilience is influenced by various factors. Responses are measured on a 5-point Likert scale, ranging from (1) Strongly Disagree to (5) Strongly Agree. An example item from this section is "I am still able to perform daily activities effectively even under new normative conditions."

The researcher conducted a pilot study involving 40 respondents from the high-risk group to assess the validity and reliability of the questionnaire. Validity was ensured by subjecting the questionnaire to expert examination and refining it based on feedback received during the pilot test. Reliability was evaluated using Cronbach's alpha, with values exceeding 0.7 deemed acceptable for each variable, indicating internal consistency within the measures. Data collection occurred between February 3rd and 12th, 2022. Subsequently, collected data underwent analysis using the Statistical Package for Social Sciences (SPSS), employing both descriptive and inferential methods to derive meaningful insights.

The Findings

1. The Demographic of Respondents
This demographic analysis provides a comprehensive overview of the characteristics of the respondents involved in the study as Table 2.

Table 2. Demographic analysis of the respondents

Demographic characteristic	Category	Frequency	Percentage
Age	1-20	3	8
	21-40	116	30.2
	41-60	67	17.4
	60 and above	198	51.6
	Total	**384**	**100**
Gender	Male	216	56.3
	Female	168	43.8
	Total	384	100
Marital Status	Single	104	27.1
	Married	240	62.5
	Divorced	25	6.5
	Widowed	15	3.9
	Total	**384**	**100**
Race	Malay	196	51.0
	Chinese	125	32.6
	India	48	12.5
	Others	15	3.9
	Total	**384**	**100**
Religion	Islam	198	51.6
	Christian	60	15.6
	Buddhist	82	21.4
	Hindu	41	10.7
	Others	3	8
	Total	**384**	**100**
Education	No Formal Education	99	25.8
	SPM	65	16.9
	STPM/A-Level	39	10.2
	Diploma	57	14.8
	Degree	99	25.8
	Master	8	2.1
	PHD	17	4.4
	Total	**384**	**100**
Employment	Employed Full-Time	210	54.7
	Employed Part-Time	20	5.2
	Seeking opportunities	7	1.8
	Retired	147	38.3
	Total	**384**	**100**
Income status	B40 (RM0-4849)	245	63.8
	M20 (RM4850-10959)	105	27.3
	T20 (> RM 10960)	34	8.9
	Total	**384**	**100**

The respondents' ages were diverse, with the majority 51.6% being aged 60 and above, followed by those aged 21-40, 30.2%. Gender distribution showed a slight majority of male respondents 56.3% compared to female respondents 43.8%. Marital status varied among respondents, with the largest proportion being married 62.5%, followed by singles 27.1%. In terms of race, the majority identified as Malay 51.0%, followed by Chinese 32.6% and Indian 12.5%. Islam was the predominant religion 51.6%, followed by Christianity 15.6% and Buddhism 21.4%. Education levels varied, with the highest proportion having completed SPM

16.9% or having no formal education 25.8%. Employment status showed that a majority were employed full-time 54.7%, while a significant portion were retired 38.3%. Income status varied, with the majority falling under the B40 category 63.8%. This demographic profile offers valuable insights into the composition of the study sample, aiding in the interpretation of study findings within specific demographic contexts.

Table 3 presents the demographic distribution of the high-risk group participants in the study. The high-risk group was categorized into two main categories: Front Liner and Elderly. Among the participants, 184 individuals (47.9%) were classified as Front Liners, while 200 individuals (52.1%) fell into the Elderly category. This distribution provides insight into the composition of the high-risk group participants, indicating a relatively balanced representation between Front Liners and Elderly individuals in the study sample.

Table 3. Demographic high-risk group

High Risk Group	Frequency	Percentage %
Front Liner	184	47.9
Elderly	200	52.1
Total	**384**	**100**

2. Levels of Knowledge, Family Support, Media Exposure, Optimistic Thinking, and Resilience Pertaining to COVID-19 Preventive Measures

RO1: To assess the levels of knowledge, family support, media exposure, optimistic thinking, and resilience pertaining to COVID-19 preventive measures among high-risk groups in Malacca.

Level of Knowledge
Table 4 presents the results obtained from descriptive analysis regarding respondents' level of knowledge. It was observed that among the seven items comprising the variable, item 3 ("Individuals with chronic diseases and the elderly are at higher risk of being infected by the Covid-19 outbreak") attained the highest mean value of 4.20, accompanied by a standard deviation value of 0.704. Conversely, the item with the lowest mean value was identified as item 4 ("Individuals infected by Covid-19 outbreaks can recover without special treatment"), with a mean score of 4.06 and standard deviation of 0.742. The findings indicate that a majority of respondents possess adequate knowledge regarding the risks and threats associated with the COVID-19 pandemic. Notably, the high-risk group generally exhibits a commendable level of knowledge, which contributes to the cultivation of resilience.

Table 4. Descriptive analysis level of knowledge

No	Analysis levelof knowledge (N=384)	M	%	SD	level
3	Individuals with chronic diseases and the elderly are at higher risk infected byCovid-19 outbreak	4.20	84	0.704	High
1	Cough, runny nose, sore throat, fever and shortness of breath are symptoms of a Covid-19 outbreak	4.16	83.2	0.766	High
7	Without knowledge, I personally will feel low resilience.	4.14	82.8	0.739	High
2	Covid-19 outbreaks are spread through droplets or splashes of body fluids when coughing, sneezing and talking	4.08	81.6	0.820	High
6	I understand that I am at high risk of a Covid-19	4.08	81.6	0.819	High
5	I know how to protect myself from infected by Covid-19 outbreak	4.06	81.2	0.759	High
4	Individuals infected by Covid-19 outbreaks can recover without special treatment	4.06	81.2	0.742	High
	Total	**4.11**	**82.23 %**	**0.76**	**High**

*5 Likert Scale ranging from 1 = strongly disagree (0-20%); 2 = disagree (21-40%); 3 = neutral (41-60%), 4 = Agree (61-80%) and 5 = strongly agree (81-100%)

Level of Family Support
Table 5 presents the results obtained from descriptive analysis used to assess the respondents' level of family support. The findings indicate that a significant proportion of respondents affirmed the importance of family

support in fostering resilience against the COVID-19 pandemic. Specifically, item 1 ("Family support is important for me") emerged with the highest mean value (M=4.32, SD=0.715), underscoring the perceived significance of family support among the high-risk group in bolstering their resilience against COVID-19. Conversely, item 4 ("My family does not encourage me to go to public places") recorded the lowest mean value (M=3.70, SD= 1.075), suggesting that while the majority of respondents acknowledged the role of family support in navigating the challenges posed by COVID-19, there are areas where improvements in familial encouragement may be warranted. Numerous studies have highlighted the pivotal role of family and social support in fostering resilience, and the findings of this study align with this existing literature, affirming the consensus regarding the importance of family support in resilience-building efforts.

Table 5. Descriptive analysis for family support

No	Family support (N=384)	M	%	SD	Level
1	Family support is important for me	4.32	86.4	0.715	High
2	Family support made me stronger to fight the Covid-19 outbreak	4.21	84.2	0.706	High
7	We face our difficulty as a family rather than individually	4.20	84	0.760	High
6	Family member can encourage each other and we have faith to overcome the problems we encounter	4.11	82.2	0.796	High
3	My family always reminds me to follow SOP when going outside of the house	4.09	81.8	0.758	High
5	My family encouraged me to do physical exercise at home	3.88	77.6	0.817	High
4	My family does not encourage me to go to public places	3.70	74	1.075	High
	Total	**4.07**	**81.46**	**0.80**	**High**

*5 Likert Scale ranging from 1 = strongly disagree (0-20%); 2 = disagree (21-40%); 3 = neutral (41-60%), 4 = Agree (61-80%) and 5 = strongly agree (81-100%)

Level of Media Exposure

Table 6 presents the results obtained from descriptive analysis used to assess the respondents' level of media exposure. The findings indicate that the majority of respondents are cognizant of the influence of mass media in fostering resilience against the COVID-19 pandemic. Specifically, item 6 ("I listen to the radio to get news about the Covid-19 outbreak") recorded the highest mean value (M=4.22, SD=0.761), suggesting that a significant proportion of the high-risk group frequently rely on radio broadcasts for the latest updates on the outbreak. Conversely, item 4 ("I share news about the Covid-19 outbreak on my Facebook account") yielded the lowest mean value (M=3.58, SD=1.115), implying that individuals in the high-risk group may refrain from sharing pandemic-related news on social media platforms to avoid perpetuating fear and anxiety. Overall, the findings underscore the high-risk group's recognition of the advantages of media exposure in fostering resilience against the COVID-19 pandemic. Research investigating the impact of mass media exposure on individuals' emotions has similarly reported that increased exposure to positive and credible news correlates with improved emotional well-being. Thus, the results corroborate existing literature indicating a positive association between media exposure and resilience-building efforts.

Table 6. Descriptive analysis for media exposure

No	Media exposure (N=384)	M	%	SD	Level
6	I listen to radio to get the news about the Covid-19 outbreak	4.22	84.4	0.761	High
5	I browse the website of the Ministry of Health Malaysia to get the latest information on the Covid-19 outbreak	4.17	83.4	0.793	High
7	I believe the mass media reports about the Covid-19 outbreak	4.03	80.6	0.781	High
2	I got news of the Covid-19 outbreak from social media	3.90	78	0.815	High
1	I received the latest news of Covid-19 outbreak cases through news reports on television	3.81	76.2	0.908	High
3	I receive the latest news on the Covid-19 outbreak via WhatsApp	3.71	74.2	0.912	High
4	I shared news about the Covid-19 outbreak on my Facebook account	3.58	71.6	1.115	moderate
	Total	**4**	**78.34**	**1**	**High**

*5 Likert Scale ranging from 1 = strongly disagree (0-20%); 2 = disagree (21-40%); 3 = neutral (41-60%), 4 = Agree (61-80%) and 5 = strongly agree (81-100%)

Level of Optimistic Thinking

Table 7 presents the results obtained from descriptive analysis used to assess the respondents' level of optimistic thinking. The findings indicate that a majority of respondents demonstrate optimistic attitudes towards the COVID-19 pandemic. Specifically, item 2 ("I know how to find peace of mind") recorded the highest mean value for this variable (M=4.15, SD=0.767), suggesting that despite the prevalence of fears and anxieties, the majority of the high-risk group possess the ability to maintain a sense of calm amidst adversity. Conversely, item 1 ("I am able to adapt to new norms") yielded the lowest mean value (M=3.89, SD=0.815), indicating that while many respondents exhibit optimistic tendencies, there may be some reservations regarding their ability to fully adapt to new norms imposed by the pandemic. Overall, the findings highlight the prevalence of optimistic thinking among the high-risk group during the COVID-19 pandemic, with the majority of respondents leaning towards optimistic perspectives

Table 7. Descriptive analysis for optimistic thinking

No	Optimistic thinking (N=384)	M	%	SD	Level
2	I know how to find peace of mind	4.15	83	0.767	High
6	I know how to reduce my stress level during Covid-19 outbreak	4.12	82.4	0.789	High
8	I manage to think on the positive side even during Covid-19 outbreak	4.10	82	0.740	High
7	I have the ability to achieve my life goals even during Covid-19 outbreak	4.07	81.4	0.787	High
3	Optimistic thinking can help me to face the challenges in life	4.06	81.2	0.761	High
4	I believe the Covid-19 vaccine is safe	4.05	81	0.756	High
5	I managed to stay happy even during Covid-19 outbreak	4.03	80.6	0.791	High
1	I am able to adapt with new norms	3.89	77.8	0.815	High
	Total	**4.06**	**81.18**	**0.78**	**High**

*5 Likert Scale ranging from 1 = strongly disagree (0-20%); 2 = disagree (21-40%); 3 = neutral (41-60%), 4 = Agree (61-80%) and 5 = strongly agree (81-100%)

Level of Resilience

Table 8 presents the results obtained from a one-sample T-test used to assess the respondents' level of resilience. The findings indicate that a majority of respondents exhibit high levels of resilience towards the COVID-19 pandemic. Specifically, item 1 ("I have never been infected by the Covid-19 outbreak") recorded the highest mean value (M=4.20, SD=0.754), suggesting that despite any inconveniences, most individuals in the high-risk group firmly believe they have never contracted COVID-19. Conversely, item 3 ("I am able to cope with stress during the Covid-19 outbreak") yielded the lowest mean value (M=4.14, SD=0.86), indicating that while respondents generally demonstrate resilience in coping with stress during the pandemic, there may be some variability in their perceived ability to effectively manage stressors. Overall, the findings underscore the high level of resilience exhibited by the high-risk group towards the COVID-19 pandemic, highlighting their ability to navigate challenges and maintain a resilient outlook amidst adversity.

Table 8. Descriptive analysis for resilience

No	Resilience(N=384)	M	%	SD	Level
1	I never be infected by Covid-19 outbreak	4.20	84	0.754	High
2	I can adapt to Covid-19 SOP	4.16	83.2	1.240	High
4	I am able to carry out daily activities well even under new normative conditions	4.14	82.8	0.739	High
6	I tend to bounce back quickly after Covid-19 outbreak hard time	4.14	82.8	0.806	High
7	It does not take me a long time to recover from Covid-19 outbreak	4.13	82.6	0.846	High
5	I remain focused on achieving life goals even in the face of new norms	4.12	82.4	0.843	High
3	I am able to cope with stress during Covid-19 outbreak	4.08	81.6	0.820	High
	Total	**4.14**	**82.77**	**0.864**	**High**

3. Relationships between Knowledge, Family Support, Media Exposure, Optimistic Thinking, and Resilience

RO2: To examine the relationships between knowledge, family support, media exposure, optimistic thinking, and resilience among high-risk groups in Malacca during the COVID-19 pandemic.

The relationship between knowledge and resilience exhibits a strong positive correlation, as evidenced by a Pearson correlation coefficient (r) of 0.715 (p < .001) as per table 9. This robust correlation underscores the significant association between these variables, indicating that greater knowledge about COVID-19 preventive measures is associated with higher levels of resilience among high-risk groups. Similarly, family support and resilience demonstrate a positive correlation, albeit with a lower coefficient of 0.186 (p < .05). While this correlation suggests a positive relationship between the two variables, it is not as pronounced as that observed between knowledge and resilience.

     In contrast, media exposure and resilience also exhibit a positive correlation, albeit with a coefficient of 0.266 (p < .01). Although this correlation suggests a positive association between media exposure and resilience, it is relatively weaker compared to the relationship between knowledge and resilience. Notably, however, media exposure appears to exert a more substantial influence on resilience than family support. Optimistic thinking and resilience display a strong positive correlation, with a coefficient of 0.470 (p < .001), indicating a significant association between these variables. Optimistic thinking emerges as a particularly influential factor contributing to resilience among high-risk groups, with its effect surpassing that of family support and media exposure. Among the selected variables, optimistic thinking demonstrates the highest impact on resilience, following knowledge. This underscores the critical role of optimistic thinking in fostering resilience among individuals facing the challenges posed by the COVID-19 endemic.

Table 9 Pearson correlation analysis

Variables	Knowledge	Family support	Media Exposure	Optimistic Thinking	Resilience
Knowledge	1				
Family support	.310**	1			
Media Exposure	.243**	-.041	1		
Optimistic Thinking	.767**	.352**	.163**	1	
Resilience	.715**	.186**	.266**	.470**	1
Sig. (2-tailed)	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

4. Predictor among the High-Risk Group Resilience

RO3: To measure the best predictor among the high-risk group resilience.

A multiple linear regression analysis was conducted to predict Resilience based on the variables of knowledge, family support, media exposure, and Optimistic thinking. The analysis yielded a significant regression equation ($F_{(4,379)} = 108.82$, p < .000), with an R^2 of .535, indicating that approximately 53.5% of the variance in Resilience can be explained by the predictor variables. The regression equation is expressed as follows: Resilience = .701 - .945 * knowledge - .005 * family support + .092 * media exposure - .194 * optimistic thinking. Among the predictor variables, knowledge, media exposure, and optimistic thinking were found to be significant predictors of resilience (knowledge: β=.835, t=14.964, p=.000; media exposure: β=.092, t=2.537, p=.012; optimistic thinking: β=-.184, t=-3.302, p=.001), while family support did not emerge as a significant predictor (β=-.005, t=-0.128, p=.898). Thus, knowledge was identified as the strongest predictor of resilience. Overall, the findings suggest that higher levels of knowledge, media exposure, and optimistic thinking are associated with greater resilience, highlighting the importance of these factors in fostering resilience amidst the challenges of the COVID-19 pandemic.

Table 10. Regression Analysis

Coefficients

Variables		β	Std. Error	Beta	t	Sig.
				Standardized Coefficients		
		Unstandardized Coefficients				
1	(Constant)	.701	.221		3.169	.002
	Knowledge	.945	.063	.835	14.964	.000
	Family support	-.005	.037	-.005	-.128	.898
	Media Exposure	.092	.036	.092	2.537	.012
	Optimistic Thinking	-.194	.059	-.184	-3.302	.001

a. Dependent Variable: Resilience

$F = 108.82$; $p < .000$; R^2 of .535; R^2 Adj.=.530
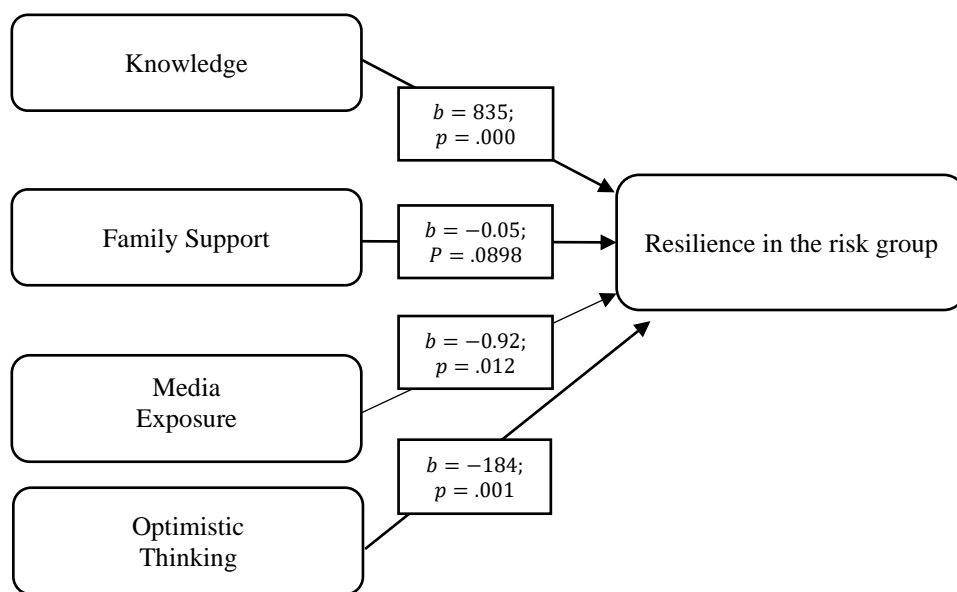
Figure 2. Summary of regression analysis results

Discussion

The findings of this study suggest that individuals belonging to high-risk groups exhibit higher levels of resilience when they possess a greater understanding of the COVID-19 endemic. In other words, there is a positive relationship between the depth of knowledge about the pandemic and the ability to bounce back from its challenges. This implies that knowledge acts as a protective factor, equipping individuals with the information and understanding necessary to navigate through the complexities of the pandemic and effectively cope with its impact. Essentially, the study highlights the empowering effect of knowledge in enhancing resilience, as individuals with a comprehensive understanding of the pandemic are better equipped to face its challenges and mitigate its adverse effects. By shedding light on the importance of knowledge in resilience-building, the study underscores the potential of education and information dissemination efforts in promoting resilience among high-risk groups during crises like the COVID-19 pandemic.

The study highlights the significant role of family support in bolstering resilience among individuals within high-risk groups. Research has consistently shown the positive impact of family and social support on resilience development (Coyle, 2011; Ozbay et al., 2007). Previous studies have underscored the vital role of familial relationships and support networks in nurturing resilience amidst adversity (Ainur & Nur Saadah, 2023). For instance, a study investigating the influence of family and social support on resilience levels emphasized the importance of receiving support from loved ones in coping with stress and life challenges. This underscores the crucial role that family support plays in fostering resilience among individuals facing heightened vulnerabilities, such as those in high-risk groups during the COVID-19 pandemic. By providing a

supportive environment and fostering strong familial bonds, families can serve as a source of strength and resilience for their members, enabling them to navigate through difficult circumstances with greater resilience and adaptability. Thus, the study underscores the importance of acknowledging and harnessing the protective influence of family support in promoting resilience among high-risk groups amidst crises like the COVID-19 pandemic.

Upon reviewing the findings of this study, a positive correlation between media exposure and individuals' resilience was observed. Media served as a coping mechanism for individuals during the endemic, offering a source of information amidst challenging news and providing a beacon of hope for the future. Increased media exposure was associated with higher levels of resilience among respondents. To contextualize the relationship between media exposure and resilience, previous studies conducted during similar times of crisis, such as the COVID-19 pandemic, were examined (Eden et al., 2020; Giri & Maurya, 2021). Consistently, these studies also reported a positive association between media consumption and resilience. Media exposure was perceived as a means of staying informed and connected, which contributed to individuals' ability to navigate through adversity with resilience. Therefore, the findings suggest that media plays a pivotal role in bolstering resilience during challenging times, highlighting its potential as a valuable resource for individuals facing crises like the COVID-19 pandemic.

The findings of this research indicate a significant positive correlation between optimism and resilience. Through Pearson correlation analysis, it was observed that optimistic thinking is closely linked to higher levels of resilience among individuals. These results are consistent with prior research, including studies by Maheshwari & Jutta (2020) and Souri & Hasanirad (2011), which have consistently demonstrated a strong positive relationship between optimism and resilience. Essentially, the more optimistic an individual is, the greater their likelihood of exhibiting resilience in the face of adversity. For instance, a study involving four hundred medical students exploring the relationship between optimism, resilience, and psychological well-being found a robust positive correlation between resilience and optimistic thinking. Moreover, the multiple regression analysis conducted in this study revealed that knowledge is a significant predictor of resilience. Individuals with higher levels of knowledge about the endemic demonstrated greater resilience. This finding underscores the importance of knowledge in fostering resilience, particularly among high-risk groups during times of crisis such as the endemic. Understanding the extent of individuals' knowledge can serve as a valuable tool for researchers in predicting their level of resilience. By identifying the factors that contribute to resilience, such as knowledge, researchers and practitioners can develop targeted interventions and strategies to enhance resilience among vulnerable populations.

The results of the multiple regression analysis conducted in this study revealed a surprising finding: resilience was not predicted by family support. Despite the presence of family support among high-risk groups, particularly during the endemic, resilience levels did not significantly increase. This finding contrasts with previous literature, which has often emphasized the significant role of family support in fostering resilience. The study's findings challenge the conventional notion that family support inherently leads to greater resilience among individuals facing adversity. While family support may offer emotional and practical assistance, its direct impact on resilience may be more nuanced than previously thought. This suggests that factors beyond family support alone may play a more significant role in determining resilience levels among high-risk groups. Further research is needed to explore the complex interplay between various factors, including individual coping strategies, external support systems, and internal resilience resources, to better understand the dynamics of resilience in the context of familial relationships.

Conclusion
The findings provided valuable insights into how knowledge, optimistic thinking, media exposure, and family support contribute to resilience in the face of adversity. Firstly, the study revealed a positive correlation between knowledge and resilience. High-risk individuals who possessed a better understanding of COVID-19 preventive measures and risks demonstrated higher levels of resilience. This underscores the importance of education and information dissemination in empowering individuals to navigate challenges effectively. Secondly, optimistic thinking emerged as a significant predictor of resilience. Those who maintained a

positive outlook were better equipped to cope with stress and uncertainty associated with the pandemic. Optimism acted as a psychological buffer, enabling individuals to adopt adaptive coping strategies and maintain emotional well-being amidst adversity. Moreover, media exposure was found to have a positive impact on resilience. Despite the influx of pandemic-related news, individuals who engaged with media outlets for information demonstrated higher levels of resilience. Access to accurate and timely information helped individuals make informed decisions and alleviate fears, contributing to their overall resilience. Additionally, family support was identified as a crucial determinant of resilience. High-risk individuals who received support and encouragement from family members exhibited greater resilience. Positive familial relationships fostered a sense of security and belonging, enabling individuals to navigate challenges with resilience and determination.

However, it's important to acknowledge the study's limitations, including the use of quantitative methods and convenience sampling. While the findings shed light on the relationship between external factors and resilience, future research could explore internal factors and incorporate diverse populations for a more comprehensive understanding. Overall, this research contributes to our understanding of resilience dynamics during the COVID-19 pandemic and highlights the importance of knowledge, optimistic thinking, media exposure, and family support in fostering resilience among high-risk groups. By addressing these factors, policymakers and healthcare professionals can develop targeted interventions to support individuals facing adversity and promote resilience in communities. However, it's important to acknowledge the limitations of the study. The quantitative approach and convenience sampling method employed may have constrained the depth of analysis and generalizability of the findings. While the study focused on external factors influencing resilience, future research could benefit from incorporating internal factors, such as personal coping mechanisms and psychological traits, by utilizing resilience theory. Additionally, expanding the sample to include diverse populations beyond high-risk groups in Malacca could provide a more comprehensive understanding of resilience dynamics during the endemic. Furthermore, future studies could explore alternative data analysis techniques, such as structural equation modeling (SEM) or Partial Least Squares (PLS), to elucidate complex relationships between variables and identify potential moderating factors. By addressing these suggestions, researchers can further advance our understanding of resilience and inform the development of targeted interventions to support individuals facing adversities like the COVID-19 pandemic.

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Conflicts of Interest: The authors declare no conflict of interest.

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